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A Magazine of Western
Ornithology



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THE CONDOR

A Magazine of Western Ornithology

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A BI-MONTHLY MAGAZINE OF
WESTERN ORNITHOLOGY

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VOLUME XXXVI

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GONZALO PIZARRO'S TRAIL TO THE LAND OF CINNAMON AND ITS DENIZENS

WITH FOUR ILLUSTRATIONS

By ROBERT T. MOORE

By reason of the continual Rains, and moisture of the Earth, their woollen Cloths and linen being always wet, became rotten, and dropped from their Bodies, so that from the highest to the lowest every Man was naked, and had no other covering than some few Leaves. . . . So great, and so insupportable were the Miseries which Gonzalo Picarro and his Companions endured for want of Food, that the four thousand Indians which attended him in this Discovery, perished with Famine. . . . Likewise of the three hundred and forty Spaniards which entred on this Discovery, two hundred and ten dyed, besides the fifty which were carried away by Orellana. . . .—The Royal Commentaries of Peru, by Garcilasso de la Vega (Translated by Sir Paul Rycaut), p. 632.

Over the trail that Gonzalo Pizarro undoubtedly took, and into the Land of Cinnamon, our party of four Americans, consisting of Mrs. Moore and our four-year-old daughter Marilyn, Waddell Austin and myself, started gaily in an automobile from the city of Quito. After a week of city life in the capital, we were happy once more to be on our way toward the wide open spaces. Perhaps we were unduly light-hearted, but we had learned to discount the forebodings of city friends in Quito, who two years previous had prophesied the return of our bodies in an unsightly condition from the land of the head-hunting Jivaros. Although we had had experiences enough, when one recalls the constant rains, our camp-sites in swamps and three land-slides that obliterated our trail, nevertheless the Jivaros had no desire to take off our heads and proved to be harmless. Furthermore the two men of our new party had recently returned from the really trying experiences of the Sangay Labyrinth and the ascent of Mt. Sangay. At least the country we were entering had been explored, the trail was known to our Indians, however bad it might be, and we would not have to cut a way through with machetes into a maze of unexplored canyons, with a following of superstitious Indians. So, we set out gaily enough. Eight miles from the capital, we were halted at the bridge over the great Guallabamba Canyon. A horde of Indians were repairing the road on the other side and a fall of debris rendered further progress by automobile impossible,

so we waited for pack animals, which were brought up by Waddell from a near-by village. Two experienced collectors were with us, Carlos Olalla and Teodomiro Mena, as well as the Indian cargiadores with their mules and burros. It is impossible within the space of this short article to recount our experiences with proper continuity or to give more than thumb-sketches of the great many species of birds encountered.

While we waited at the bridge, the last proud symbol of the civilization we were leaving, my mind wandered to the birds of Cumbaya and Tumbaco, the quaint villages through which we had just passed. Two years previous I had spent a delightful afternoon in the valley of Tumbaco hunting for nests of five hummingbirds. The giant of them all, *Patagona gigas*, had proved exceedingly shy and it was not until two weeks earlier, of this year, that I found its chosen haunts at an elevation of 1600 feet on the northern slopes of Mt. Chimborazo. His flight, so curiously like that of his distant cousin the swift, had led us from one huge flower stalk to another. I could still see those mullen-like stalks, fifteen feet in height with bayonet leaves, their dull blue flowers etched like blue candelabra against the ice-fields of the great giant of the Andes. *Psolidoprymna* with its appendage of sub-specific names, almost as long as its own seven-inch steering mechanism, had proved more friendly and admitted us to the secrets of its housekeeping activities. Several of its nests, placed behind tree-roots protruding from high banks, had been found throughout the valley. The short tail of the female made accurate steering possible through the tangle of roots, but the long tail of the male proved a hindrance in strong winds, bending almost double at sudden gusts.

The gem of the valley had proved to be *Chlorostilbon melanorhynchus melanorhynchus* with its glittering green breast-plate and golden crown. Frequenters of the flowers of the guava tree, the buzz of their tiny motors had been a common sound in the valley. Perhaps more startling had been the sudden displays of *Myrtis fanny* with its glorious blue-green throat and semi-lunar band of tyrian fire. Common as the bird is, fully adult males are scarce, and when obtained, an unending delight. Rarest of all was to come, the dullest of all Trochili. Described by Gould as *Pinarolaema buckleyi* from a specimen secured at Misqui in Bolivia, it had reappeared after forty years in the Chillo Valley, not ten miles from Tumbaco, and was believed by Dr. Oberholser to be a color phase of *Colibri iolata*. The discovery of this third specimen, after a lapse of thirty more years, so exactly like the illustration in Gould's Monograph, had raised once more the question of the validity of this non-iridescent quakeress of grays and mauves. And then my thoughts were brought back sharply to immediate problems by the clatter of the hoofs of our mules and the patter of Indian feet.

A half hour later we were picking huge pink button-balls from Mimosa shrubs near romantic Pifo. On the other side of the village relief was found from the burning tropical sun. Only a few miles from the equator, we were glad to climb to a grassy terrace high above the stream-bed, under a huge clump of swaying eucalypti. These trees have been imported into Ecuador from Australia and have become the chief source of supply for firewood. Lunch was interrupted by the sight of a beautiful tanager with yellow breast and rump and sky-blue crown. I realized it was *Thraupis darwini*, the same bird that had been collected in the Valle Tumbaco a few days previous, a species whose bill had immediately called attention to possible affinities with the exquisite new tanager of the Mt. Sangay Labyrinth. A few miles farther on we came to Paluguillo, the last *hacienda* of the central Andes

at approximately 9500 feet altitude, and then began the real ascent. Hemmed in by slopes of volcanic rock, the trail climbs to the grass-lands of the Paramo Zone and crosses several streams. I decided to try Marilyn out on the small burro, which the owner had claimed was "perfectly safe". But the burro had ideas of his own and the moment he was free with his new burden, bolted straight down a rocky trail to the edge of a boisterous stream. Reaching the bank he decided to jump and covered the stream with a tremendous effort. To our surprise the burro stopped on the opposite bank, turned around and—Marilynn was still in the saddle! When I caught up with her she exclaimed: "Daddy, I love it! Make him go faster!" Thereafter she rode an average of eight hours a day throughout the entire trip, and



Fig. 18. Camp-site to west of Guamani Pass at about 12,500 feet. The two mules on right belong to party of Indians from the Rio Napo, who were taking wild parrots to Quito.

the burro, apparently proud of his tiny mistress, decided to behave. Before dark we descended to a tree-covered shelf protected from the wind in a small arroyo beside a roaring torrent and hastily made camp for the night. A huge tree curved its arms over our tent and reached to the top of the bluff fifty feet above us. As Mrs. Moore opened an army trunk a terrific crash was heard in the tree-tops above us. She jumped just in time, as one of the mules hurtled down through the limbs and landed directly on the trunk.

Somewhat later, crossing Guamani Pass at 13,354 feet, we reached a romantic lake with an unromantic name, Sugchoscocha, whose waters for the first time in our trip were flowing east, into the Papallacta river and on towards the Amazon. Sinclair states that both this one and Lake Papallacta, four miles farther on, have been formed by lava dams, and adds: "The tree-line of the eastern slope may here be drawn at 11,400 feet". An abundant tree-growth and flowers proved that we had entered the Humid Temperate Zone. About five miles beyond the pass the trail

suddenly fronted a beautiful valley and we wound down a fuchsia-bordered road to the Indian village of Papallacta. After our experiences in the cold rains of the bleak Paramo the profusion of flowers in the valley seemed a paradise. The mountain sides are heavily covered with trees, the under-growth dense, tangled with vines and graced with ferns. Conspicuous flowers such as the great pink trumpets of the taxcus, *Tacsonia mollissima*, and the fuchsias, which here reach the proportions of small trees, were so profuse in favored corners of the valley that at sudden turns their draping masses looked like tiny waterfalls of pink or red.

We made the mistake of passing the one house of the village, which did not have a thatched roof, and kept on a half mile beyond the town to pitch tents in a



Fig. 19. Aged guanto tree in Baños Valley outlined at sunrise against humid temperate tree-growth at base of Mt. Antisana, 18,884 feet in altitude.

clearing, flanked by the forest. The next morning the *teniente politico*, wrapped in a brown smoking jacket with black braid and gesticulating, stalked up and down the road, obviously in a hostile mood. Behind was his Indian attendant who kept a dignified pace just five steps away. Later he announced to Teodomiro that we would not be permitted to hunt unless we showed our papers. As the papers had been left by mistake in Quito, I decided to have a talk with him. Receiving me in frigid fashion, he made me sit down, and when I admitted that I had no recent papers, proceeded to declaim a long story from the daily newspaper of Quito, *El Dia*. It turned out to be an interminable account, flowered with resounding adjectives, concerning our first ascent of Mt. Sangay, seven weeks earlier. When he had finished, he suddenly broke into a smile and greeted me by name, bowing suavely. Decorating me with Spanish titles of respect, he then offered to transport his own high-posted bed on the backs of his Indians to the valley of Baños above the water-fall, where we were planning to go the next day. He shook his head in a bewildered manner at my preference for the shaky cot of canvas.

The following morning found us climbing up the steep northern slope of the valley beside the Chorera Papallacta. Off-shoots of this rather imposing water-fall had made a mire of the trail. Apparently as an after-thought, the Indians told us that no one had ever attempted to take cargo-bearing animals into this higher valley! Endeavoring to lead my horse across the main stream above the water-fall, it began plunging desperately and soon was helpless on its side. It looked as if a rifle shot would be the only solution, but after an enormous effort the Indians got it on its feet and helped it to the natural meadow, which formed the floor of the narrow gorge. We were soon pitching our tent two miles up the enlarged canyon between a hot spring and a boisterous torrent of cold water. The muddy passage through



Fig. 20. Moss-hung guanto trees (*Datura sanguinea*) in Baños Valley. The light-colored objects on nearest tree are the twelve-inch orange flowers. Our collector, Teodomira Mena, is the standing Indian.

the southern throat of this Andean Yosemite was soon forgotten in the anticipation of easy camp-life in such pleasant surroundings.

Sinclair's survey gives the elevation of Papallacta as 10,333 feet. This would indicate an elevation of nearly 11,000 feet for the floor of the Baños canyon. The east and west walls are quite steep. The north end of it contracts into a narrow gorge, which the Indians stated was impassable. The only outlet was "over" the water-fall at the southern end. Down that way we could see the heavily wooded slopes of the far side of the Papallacta Valley, mounting up knoll after knoll, all heavily wooded, to the base of a giant mountain, which we later discovered was the celebrated Antisana. Clearly the tree-growth of the Humid Temperate Zone was being carried up to a high altitude, perhaps exceeding 12,000 feet. At Pallatanga on the western slope of the Andes, the upper limit of the Humid Temperate could not have exceeded 9500 feet. No doubt the heavier rainfall and the upsweep of heat from the Amazonian Basin accounts for the pushing upwards of this tongue

of rich forest association. Obviously we were established in the Humid Temperate Zone, but the growth about us gave a superficial resemblance to the Sub-tropical. The trees were heavily hung with moss as well as epiphytic and parasitic plant life. Although trees and shrubs were scattered on the valley floor, the growth along the banks of the stream was extraordinarily thick and almost impenetrable, particularly near the several hot springs at the upper part of the valley, whose constant steam may have had some effect in causing the luxuriant growth.

The "guanto" tree was the most conspicuous object in the valley. It is a tree member of the genus *Datura*, formerly called *Brugmansia sanguinea*, perhaps the most striking example of the group of so-called "trumpet flowers". Thick groves of these trees with moss-draped limbs created spaces of intertangled darkness along the stream. But a few stood out stark and bold in the center of the valley against the glittering ice-fields of Antisana, whose peak rose 18,884 feet into the clear blue and seemed to block the southern end of the valley in moments of sunlight. Many of these scattered trees had great gnarled branches and were blotched with huge masses of a lavender bromelia three feet in diameter. The beauty of the "guanto" tree lies in its enormous flowers twelve inches long and varying through all the shades of orange, yellow and pink. The Sword-bill, *Ensifera ensifera*, frequented them almost exclusively. Long as his seven inch bill is, this hummingbird can not reach the bottom of the corolla and must content himself with foraging for insects among the ribs of its orange-throated cave. *Ensifera* is a dauntless warrior, whose courage I had witnessed two years earlier, when its nesting site was discovered on the northern shoulders of Mt. Pichincha. For two hours these birds had darted at me with their powerful lances, as I explored their chosen tree, and frequently forced me to guard my head in precarious situations on the limbs.

The gorgeously colored red, blue and black tanager with scarlet cheek-mark *Poecilothraupis lunulata atricrissa*, was common in the valley. The pure scarlet under-parts created a startling effect in the denser gloom of fluvial associations. The larger and even handsomer tanager, *Buthraupis eximia chloronota* proved quite rare and its flash of gold, green and blue once brought me to a halt in my exploration of the gorge. Its relative of the Sangay Labyrinth, collected six weeks earlier, proved to be a new race of this form. Two other tanagers, *Poecilothraupis palpebrosa* and *Dubusia taeniata* were fairly common, but the most astounding color combination was that of *Piranga rubriceps*, whose scarlet head and throat, set off by a golden body and black wings, was the most beautiful medium-sized bird of the valley. Largest of all the tanagers, *Buthraupis cucullata cucullata* flaunted its golden breast and blue back from the higher tree-tops. Woodpeckers were scarce and only one was heard, the bronzy-backed *Veniliornis equifasciatus*. The Furnariidae were represented by the brown fern-tailed *Schizoeaca fuliginosa* and *Asthenes flammulata flammulata*, while *Margarornis perlata* displayed its golden tear-drops from the scattered bushes. The white-breasted and gray-headed *Cinclus leuconotus* proved a rather shy denizen of the streams. "Piloto" is confined to the darker depths of the torrent, where huge vines swing back and forth in the damp spray. Here its nest, resembling somewhat our White-eyed Vireo, hung daintily over the rush of powerful waters, and was secured only after several falls into the swirling flood.

Hummingbirds were represented by the greatest number of species and glittering bits of iridescence in the moss-hung gloom, where orange clusters of parasitic flowers starred the depths, gave frequent notice that this was the chosen abode of the Trochilidae. *Helianthea lutetiae*, with its green frontlet and purple throat patch, darted

here and there among the fuchsias. The black velvet abdomen of *Lafresnaya lafresnayi gayi*, vanished in the gloom. *Rhamphomicron microrhynchum*, golden-throated and purple-crowned, darted out from the margins of the thick forest. The emerald beauty, *Psaltidoprymna gracilis gracilis* and *Vestiapedes vestitus smaragdinipectus* proved that a flame of gold and purple iridescence could make one forget the barbarous appendages that man had attached to them.

What proved to be the mystery of our sojourn at Baños, was the identity of a glorious tyrian-tailed hummingbird with a glittering throat. When its nest was dis-



Fig. 21. Village of Papallacta and thatch-roofed Indian huts from near foot of Chorera de Papallacta.

covered immediately across the torrent from our camp, it was slated to be collected for identification, but the bird had its own ideas about this matter. Its nesting activities kept it constantly coursing over our tent and it seemed obviously easy to study its habits at leisure, wait for the laying of its egg and collect it just before our departure. But when the morning came to break camp, I waited impatiently for two hours in ambush near its nest, while the cargadores were rounding up the mules and equipment was being packed. We had a long day's safari ahead of us with a final plunge through a dangerous morass near the height of the pass, and finally discretion compelled me to leave without securing the one specimen I felt I was assured. However, I had become sufficiently acquainted with the hummingbirds of Ecuador, after the experience of two different years in the field, to reduce the identity of this bird to two species. It certainly belonged to the genus *Metallura* and was probably *primolina*, which was fairly common in the valley. The only other possibility was *Metallura tyrianthina tyrianthina*, but the female of this species is so easily identified and I had found so many of its nests and watched both male and female at close range, that I am confident it could not have been this form. For its nesting site, the bird had chosen a tree about fifteen feet in height on the bank of

the stream. The tree was weighted with bromelias and an exquisite orchid with small lavender flowers. Among them was a large clump of moss six feet from the ground. Resembling somewhat a Parula Warbler's nest, the only opening in the moss was a small one to the nest, completely protected by another large clump overhead. The bird busied itself carrying bunches of a whiter moss, an inch in diameter, from various points in the vicinity. It was utterly fearless and without guile, and yet her fearlessness, inducing her to enter the nest immediately on alighting and to leave without warning, made close observation difficult. Her flight from material-sites to nesting-site was direct as a bullet in its course and almost as invisible. In fact she was frequently mistaken for an insect. Her closest relative, *Metallura atrigularis* of the Sangay Labyrinth, nests on roots of banks or in rocky niches of a cliff. This is not surprising, since *Metallura tyrianthina* nests both in trees and behind roots.

We had stayed in the valley for a week, hoping that the trail by the *chorera* would dry up, but the constant mists increased the mire, and, when we finally went out, four mules foundered at one time. Attempting to carry Marilyn out in my arms through a swamp on the west side of the water-fall, I fell with her in a deep mud-hole. At length we picked our way down the deep gorge among the heavy growth of ferns and vines which festooned all interstices. An exquisite view of Papallacta rewarded us just as we emerged on the more open slopes.

Sinclair's description of the route from Papallacta to Baeza along the ancient trail to the Napo, which is probably unchanged since Gonzalo Pizarro followed its tortuous wanderings four hundred years ago, is an excellent picture of this part of the trail. He writes: "Meanwhile we continued down the river to the confluence of the Quijos and the Papallacta, where was obtained a magnificent view of the gorge of the Quijos from the trail several hundred feet above the river. We also had our first view of Antisana, whose snow-capped summit just showed above the tops of near-by wooded ridges. A short distance below this point the south side of the valley of the Quijos is formed for several miles of great cliffs, over which tributary streams cascade". Due to the unexpected stay in Papallacta and the continuing rains, we did not reach Baeza, whose elevation is given by Sinclair as 6260 feet. It is stated by Chapman to be in the Humid Sub-tropical Zone. Here is the home of many of Ecuador's most beautiful hummingbirds, but the most exquisite one of all is found at Cuyuja, a stopping point on the way to Baeza. *Cyanolesbia mocoa mocoa* is, in my judgment, one of the handsomest of all the Trochilidae. Its purple throat patch and iridescent crown of golden green are only casual touches to set off the astounding tail, six inches of emerald and blue effulgence.

Most interesting to me of all the Trochilidae was the new species, *Chaetocercus cleavesi*. Although it was collected in other places, it seems incredible that it could have been overlooked by the numerous collectors who have operated at Baeza. In spite of the fact that four adult males and four females were obtained there by the Olallas in one week, only a few specimens seem to have been secured by other collectors. Its fiery gorget of pinkish purple and its tiny size, when coming head-on into the sunlight, make it resemble a flaming bullet. Almost the same size as the little mite of Cuba, *Calypte helenae*, it is one of the smallest birds of the world. This little gem will stand out as the most memorable of this exotic land of frozen volcanoes and flaming hummingbirds.

California Institute of Technology, Pasadena, California, February 17, 1934.

SUMMARY OF A RECORD OF DUCK SHOOTING ON THE SUISUN MARSH

WITH ONE ILLUSTRATION

By EMERSON A. STONER

I recently had the privilege of examining a "record of game killed at the Tule Shooting Club", Suisun Marshes, California, during the period from 1885 to 1901, which is in the possession of Mrs. William Foreman of Benicia, California. The late "Bill" Foreman was a hotel-keeper and sportsman, and he prized this journal of early duck-shooting along with his many hunting trophies which are still on exhibition at the Foreman Tavern in Benicia. Entries in the record were carefully made, in ink, of the number of each species of birds killed each day by each member and guest. A total of 20,844 ducks are recorded as having been killed on the grounds of this club during the period indicated.

Mr. M. Hall McAllister, now of Redlands, California, who shot for thirty years on the adjacent Ibis Club, gives the location of the Tule Shooting Club as on Cor-

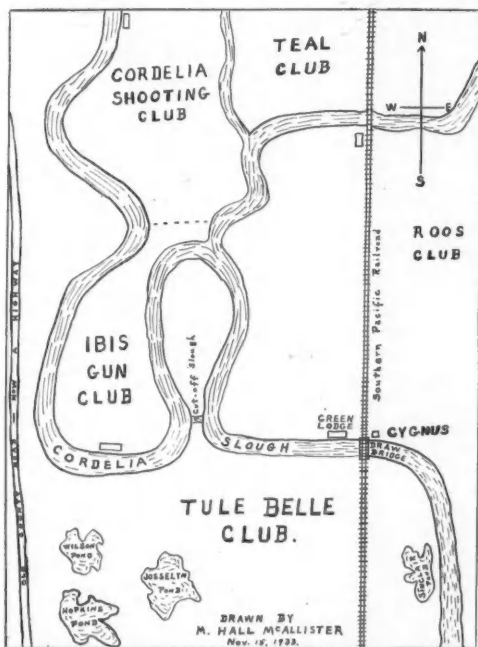


Fig. 22. Sketch showing location of several of the early shooting clubs on the Suisun marshes.

delia Slough at Cygnus. Mr. McAllister kindly prepared for me the accompanying map (fig. 22) showing the location of several of these early clubs, which were established soon after the Southern Pacific Company built their railroad through the marsh in 1876-77. Several San Francisco sportsmen negotiated for and took over

the Thickbroom Ranch near Cygnus, on which the Tule Shooting Club, later known as the Tule-Belle Shooting Club, was organized. The number of members varied in different years; in 1886-87 there were a dozen members, and during later seasons members numbered from four to ten.

Members did not ordinarily "overshoot", and the average bag for each man ran about sixteen birds. The largest bag of ducks for a single hunter at one morning's shoot recorded was 122, by William Tevis, on December 28, 1890. Mr. Foreman passed along the story among local sportsmen, of Mr. and Mrs. Thickbroom's attempts to frighten ducks from this ranch by beating tin pans in an effort to save some of their crop. He also told of three men, by name, bringing in 380 sprig and teal after shooting from 6 to 11:30 a. m. at this place.

The main value of the record, it appears to me, is in the possibilities of summarizing the record in order to find the relative abundance of the different species. This I have done in the tables which follow. The men hunting at this club were experienced sportsmen and I believe that identifications of the different ducks were recorded with fair accuracy. With the exception of the ruddies, as noted below, I believe that the table showing relative abundance as based on the record is a good indication of the relative abundance of the different species, at least at that time.

SUMMARY OF DUCKS KILLED BY THE TULE SHOOTING CLUB FROM THE
FALL OF 1885 TO THE SPRING OF 1901

Season of	Canvas-back	Mallard	Gadwall	Sprig	Widgeon	Spoonbill	Black-jack	Wood Duck	Bufflehead	Teal	Red-head	Golden-eye	Merganser	Ruddy	Total
1885-86	160	106	37	257	372	505	58	2	89	427					2,013
1886-87	10	74	9	281	616	233	4		5	775					2,008
1887-88	7	51	4	208	232	322	21		13	483					1,344
1888-89	459	32	1	471	454	202	149	2	39	397					2,215
1889-90	429	6	1	196	189	49	174		23	71	3	3		8	1,149
1890-91	30	34		312	523	87	15		50	1,038	2				2,091
1891-92	43	49	4	571	68	39	15			624	1				1,414
1892-93	1	5	2	87	94	1	10			277					478
1893-94	61	51	7	267	200	69	68	13	1	492					1,229
1894-95	2	15	2	94	98	23	12		2	143					391
1895-96	14	16	5	104	154	24	2		59	338			1		717
1896-97	1	5	2	94	160	26	1	1		106					396
1897-98	2	106	4	230	191	23	1		1	361					919
1898-99	44	88	5	581	447	47	18		55	555			1		1,841
1899-00	143	9	1	922	50	63	59		31	57					1,339
1900-01	102	53	20	432	305	146	34		5	203					1,300
Totals	1,508	701	104	5,107	4,153	1,859	641	24	373	6,347	9	4	6	8	20,844

Table showing relative abundance of ducks on the Suisun marsh, based on above summary of ducks killed at the Tule Shooting Club:

Teal (Green-winged and Cinnamon).....	30.5
Sprig (Pintail).....	24.5
Widgeon (Baldpate).....	20.0
Spoonbill (Shoveller).....	8.9
Canvas-back.....	7.2
Mallard.....	3.4
Black-jack, Blue-bill (Scaup and Ring-neck).....	3.0
Butterball (Bufflehead).....	1.8
Gadwall.....	.5
Wood Duck.....	.1
Redhead, Ruddy, Golden-eye and Merganser.....	.1

100.0

I was puzzled as to the scarcity of entries of Ruddy Ducks inasmuch as they are now commonly seen in these marshes. In response to my inquiry, Mr. McAllister writes under date of November 23, 1933, that "the lowly little Ruddy Duck was

classed with the Mudhen and not even bagged in the 'old days'; also they never came in flocks but in small bunches of two and four".

Teal were listed without separating the Green-winged from the Cinnamon. The great majority, of course, were Green-winged, the Cinnamon, besides never being especially abundant in these marshes, having migrated south prior to the height of the hunting season. McAllister states that during one of the above years (about 1890) "Green-winged Teal were present in countless thousands — like clouds in the sky".

Under the column for "Remarks" are entered data concerning the weather, tides, abundance or scarcity of ducks, and observations such as follows: "Poachers shooting on Ibis and Cordelia by moonlight" (October 25, 1893). "Johnson says Cordelia Club, by moonlight shooting, have scared away the 'cans' from the marsh" (January 17, 1892). "Heavy fall of snow" (January 4, 1887). "Hot as Hades" (February 3, 1891). "Members should kill all the mudhens they can as they are great destroyers of feed. They eat three or four times as much as the ducks" (December 6, 1895).

Shore-birds were recorded, but these were not analysed inasmuch as the records show only indefinite identification, such as snipe, plover and curlew. Geese recorded during the period are 394 Snow Geese, 16 Canada, and 31 White-fronted; 8 swans were reported as killed, this species being legally taken as a game bird at that time.

Benicia, California, December 23, 1933.

WINTER WEIGHTS OF GOLDEN-CROWNED AND FOX SPARROWS

By JEAN M. LINSDALE and E. L. SUMNER, Sr.

During the 1932-1933 winter season, we gathered facts to supplement those already reported (Univ. Calif. Publ. Zool., 40, 1934, pp. 309-320) concerning variability in weight in the Golden-crowned Sparrow (*Zonotrichia coronata*). From September to May, inclusive, 1422 records of weight were obtained for this species. These involved 286 different birds, trapped and banded on the University of California Campus at Berkeley.

Weights of Fox Sparrows (*Passerella iliaca*) trapped along with the Golden-crowned Sparrows were studied also. In all, 711 records were obtained from 91 birds at Berkeley, during the 1932-1933 winter season. These birds were not identified as to sex or subspecies; they belonged, however, to the assemblage of races which nests along the coast of British Columbia and Alaska. Some study of variation in weight in Fox Sparrows has been made already (Univ. Calif. Publ. Zool., 30, 1928, pp. 309-315).

Table 1. Summary of weight records (in grams) of wild Golden-crowned Sparrows trapped at Berkeley, California, in the 1932-1933 winter.

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Number weight records.....	2	19	201	50	55	310	542	228	15
Average weight in morning.....	29.35	27.89	28.53	28.27	30.50	28.34	28.41	30.44	33.33
Number birds.....	1	4	48	17	6	55	90	57	6
Average weight at noon.....	27.03	29.69	29.95	30.81	30.04	29.50	31.23	38.03	
Number birds.....	4	39	9	20	46	79	26	5	
Average weight in afternoon.....	29.30	29.55	29.77	30.06	31.82	30.32	30.85	31.70	
Number birds.....	1	9	38	19	21	53	77	28	
Average all weights.....	29.33	28.57	29.27	29.36	31.22	29.53	29.52	30.94	35.47
Minimum weight.....	29.30	22.65	23.00	24.40	27.10	11.95	21.15	22.10	29.10
Maximum weight.....	29.35	33.20	35.60	35.25	35.30	37.05	36.50	42.15	41.80

Table 1 was arranged primarily to determine if these records reveal any change in weight that can be correlated with advance in season. To counter-balance as much as possible the uneven representation of individuals and time of day, the average weight of every individual bird was computed for each month, and morning, noon,

and evening. These individual averages then were used to determine the values shown in the table. Each of the six series of weights shown may be examined for indications of seasonal trend in weight. Without considering September, which has only two records, there are two evident peaks, one in January and one in May. The latter is the most clearly marked, and it seems to represent beyond any doubt a distinct weight increase which comes just before the spring migration.

Another way to test the records for seasonal change in weight, is to trace the trend of a single bird. The twenty-two readings for one individual (no. C161330) from March 18, to May 9, indicate (table 2) a pronounced gain in the last part of April and in early May. Other examples show weight changes similar to those of this bird, but usually in lesser amounts.

Table 2. Weights of one Golden-crowned Sparrow (no. C161330) in the spring of 1933.

	9:00 a. m.	1:00 p. m.	5:30 p. m.		9:00 a. m.	1:00 p. m.	5:30 p. m.
Mar. 18	.....	29.95	.....	Apr. 1	.....	.....	28.10
Mar. 19	.....	27.95	28.50	Apr. 2	24.90	.....	.....
Mar. 20	25.50	.....	.....	Apr. 3	26.35	.....	27.95
Mar. 21	25.15	.....	27.90	Apr. 4	25.90	.....	.....
Mar. 22	.....	26.50	27.70	Apr. 23	.....	.....	32.20
Mar. 23	.....	26.30	26.20	May 3	29.59	.....	.....
Mar. 24	24.60	25.60	26.80	May 9	.....	36.85	.....
Mar. 31	.....	.....	28.50				

Table 3. Weights of a Golden-crowned Sparrow (no. C161233) recorded near 9:00 a. m. through the spring of 1933.

February		March		April		May	
day	grams	day	grams	day	grams	day	grams
8	29.25	1	26.95	3	28.80	3	30.80
15	29.10	4	27.15	19	30.60	4	30.80
16	28.55	5	27.25	21	28.90	10	31.55
19	27.20	6	27.65	22	29.70	12	32.20
20	27.05	8	28.15	23	29.00	15	34.05
22	28.20	14	27.95	24	29.00	.....	.....
23	27.75	18	29.00	26	29.10	.....	.....
25	28.20	20	28.30	28	29.75	.....	.....
26	26.95	21	28.55	.....	.....	.....	.....
27	27.90	.....	.....	.....	.....	.....	.....
28	28.65	.....	.....	.....	.....	.....	.....
Av.	28.07	Av.	27.88	Av.	29.35	Av.	31.54

The long series of weights of a single bird, taken at the same hour each day, and shown in table 3, indicates relative uniformity of the day to day fluctuation, as compared with the seasonal change. Again, a sharp increase in weight just before the time for migration is evident.

From the weight records made by E. Lowell Sumner, Jr., in 1928, at Claremont, California, and supplied to us, nine Golden-crowned Sparrows in January averaged 30.56 grams (25.3 to 33.5), and eighteen in February averaged 29.78 grams (23.0 to 34.9). Out of twenty-four weights of Golden-crowned Sparrows, from his records for April 13 to 29, 1932, in San Mateo County, California, six were above 40 grams. The dates with the readings above 40 grams are as follows: April 13, 42.1; April 18, 40.5, 41.0, 41.3; April 25, 46.4; April 29, 41.0. The average for the twenty-four weights is 37.0 grams; extremes, 31.0 and 46.4.

Weights of Golden-crowned Sparrows close to, or on the breeding grounds in British Columbia have been given to us by Mr. and Mrs. T. T. McCabe. Five males taken in 1932, weighed as follows: May 15, 35.4 grams; May 29, 29.92 grams; June 17, 29.50, 33.07 and 36.18 grams. Average for the five is 32.81 grams. Records from the same source in 1933, were as follows: Three females from Bella Coola, April 29 and May 5, weighed 33.71, 34.88, and 36.50 grams; three from Calvert Island, May 16 to 19, weighed 28.73, 32.09, and 32.86 grams; average of all six, 33.13 grams. Seventeen males from Bella Coola, April 22 to May 3, averaged 34.95 grams, extremes 29.70 and 39.29. Three immature birds from Chezacut, September 16 to 28, weighed 29.10, 32.02, and 32.32 grams, average 31.14.

Table 4. Summary of weights (in grams) of Fox Sparrows trapped during winter of 1932-1933, at Berkeley.

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Number weight records.....	7	33	108	26	46	270	163	48	10
Average weight in morning.....	32.73	31.46	32.58	33.82	31.97	31.49	30.55	33.12	35.73
Number birds.....	3	5	17	7	10	33	21	7	2
Average weight at noon.....	29.40	31.40	32.62	33.32	32.64	32.13	32.32	33.32	35.48
Number birds.....	1	8	20	5	15	34	16	4	2
Average weight in afternoon.....	32.95	32.72	32.93	34.45	34.47	32.41	32.97	34.04	35.78
Number birds.....	2	7	13	8	12	39	19	4	1
Average all weights.....	32.25	31.88	32.69	33.95	33.05	32.03	31.82	33.42	35.64
Minimum weight.....	29.40	27.80	26.15	28.80	26.85	25.25	21.70	27.65	31.25
Maximum weight.....	34.70	39.80	40.30	39.35	40.35	42.10	38.55	36.85	39.35

Turning to the Fox Sparrows, seasonal change in weight is again the main object in our study of the records. Table 4, was made up in the same way as table 1, and it shows that Fox Sparrows also fluctuated through the winter in weight averages. The first peak came earlier than in the Golden-crowned Sparrows, being in December rather than January. The highest monthly average was for May, but a distinct weight increase came in April just before the departure of the birds for their northern breeding grounds. These tables doubtless reflect the weight trends through the winter, for the two kinds of sparrows at Berkeley, but so many factors influence weight, that many individuals fail to conform to the normal program for their species.

We have selected two Fox Sparrows, whose individual records are numerous, and which, we *think*, but cannot demonstrate conclusively, represent fairly the normal weight changes for the species during the winter. Table 5 shows the mid-winter peak, and table 6 illustrates the late-spring increases which the averages for all the birds indicate.

Table 5. Weights of one Fox Sparrow (no. C102064) in the winter of 1932-1933.

	9:00 a. m.	1:00 p. m.	5:30 p. m.		9:00 a. m.	1:00 p. m.	5:30 p. m.
Nov. 6	32.55	.....	.....	Feb. 17	.....	29.40	.....
Nov. 7	32.15	.....	.....	Feb. 18	30.00	.....	30.95
Nov. 9	.....	.....	34.95	Feb. 19	.....	30.40	.....
Nov. 15	31.90	.....	.....	Feb. 20	29.45	29.70	29.75
Nov. 16	.....	33.20	.....	Feb. 21	.....	29.90	31.00
Nov. 21	30.30	.....	.....	Feb. 22	29.75	29.35	30.65
Nov. 22	.....	31.65	32.25	Feb. 23	.....	32.30	30.15
Nov. 23	31.15	.....	.....	Feb. 24	.....	29.30	29.65
Dec. 1	.....	.....	36.40	Feb. 25	.....	29.75	30.60
Dec. 2	32.05	.....	38.35	Feb. 26	28.45	30.45	29.10
Dec. 3	35.95	.....	.....	Feb. 27	.....	28.05	.....
Dec. 8	.....	.....	32.90	Feb. 28	28.20	28.60	28.60
Jan. 12	.....	38.00	.....	Mar. 1	28.10	28.15	.....
Jan. 14	.....	.....	37.55	Mar. 5	.....	.....	32.80
Feb. 6	.....	30.85	.....	Mar. 6	30.90	32.10	.....
Feb. 8	30.70	31.75	.....	Mar. 7	.....	31.00	31.50
Feb. 9	30.10	30.55	.....	Mar. 8	31.50	31.45	32.05
Feb. 10	29.00	.....	30.40	Mar. 9	.....	29.95	.....
Feb. 14	.....	29.95	30.75	Mar. 14	33.10	31.65	32.75
Feb. 16	30.35	.....	.....		

Table 6. Weights of one Fox Sparrow (no. C161318) in the spring of 1933.

	9:00 a. m.	1:00 p. m.	5:30 p. m.		9:00 a. m.	1:00 p. m.	5:30 p. m.
Mar. 19	.....	.....	35.90	Apr. 23	30.85	.....	.....
Mar. 23	31.45	.....	33.45	Apr. 24	31.50	.....	.....
Mar. 24	.....	31.55	31.45	Apr. 25	31.70	.....	.....
Mar. 29	.....	.....	32.05	Apr. 26	31.50	.....	.....
Mar. 30	29.40	29.25	.....	Apr. 27	32.65	.....	.....
Mar. 31	30.60	29.35	31.00	Apr. 28	32.10	.....	.....
Apr. 1	29.65	31.30	30.80	Apr. 30	31.10	.....	.....
Apr. 2	27.65	30.00	.....	May 1	31.30	.....	.....
Apr. 3	29.20	30.10	30.40	May 3	31.75	.....	.....
Apr. 4	29.45	30.40	31.40	May 4	31.25	.....	.....
Apr. 18	.....	32.50	33.50	May 9	.....	.....	36.30
Apr. 19	29.55	.....	.....	May 10	.....	36.00	.....
Apr. 20	31.85	.....	.....	May 11	.....	.....	35.25
Apr. 21	30.80	.....	.....	May 14	34.15	.....	.....
Apr. 22	30.95	.....	.....	May 15	.....	33.80	.....

Weights of Fox Sparrows obtained near the coast in British Columbia, by M₁. and Mrs. T. T. McCabe, have special interest, when compared with records made during early stages of the spring migration. Eleven males from Bella Coola, April

22 to May 2, 1933, ranged in weight from 33.05 to 42.35, average 36.82 grams. Weights of eight females from the same place, April 22 to May 9, ranged from 28.94 to 45.33, average 35.83 grams.

These figures, as well as the comparable ones for Golden-crowned Sparrows, bring the suggestion that the weight increase which comes just before the spring migration is maintained, in both species, throughout the actual migration. This tends to contradict the notion that the migration is an activity of more than ordinary exertion. However, we still believe that the migrating birds are subject to extraordinary strains and that if a high weight is actually kept, it results from an altered metabolism, and is made possible in spite of, or even to meet, the emergencies which surely accompany a long flight.

Table 1 also shows some evidence which helps to clarify our understanding of the change in weight which takes place in each bird during the day. Times of weighing the birds were principally clustered about the hours of 9 a. m., 1 p. m., and 5 p. m. In the winter months these hours fairly represented morning, noon, and evening, but, of course, some foraging was done by the birds before the morning weights were recorded. However, we think that the records serve satisfactorily to gauge the amount of correction of weights necessary to allow for differing time of day of capture, by field collectors, of birds of this type.

Fifty or more records were made for each month beginning with November and running through April. In each of these months, the average noon weight was greater than the average morning weight, and the average evening weight was greatest of the three. These values confirm those already determined for captive birds.

One golden-crown (no. C161122) weighed 34.65 grams at 5 p. m. on March 21. The next morning at 9 a. m. it was in the trap and weighed only 27.60 grams. It had lost 7.05 grams or 20 per cent of its weight the evening before. Its weight on four later mornings at the same hour was as follows: March 23, 28.40 grams; March 24, 27.50 grams; March 31, 29.45 grams; April 2, 29.60 grams. We interpret this record as meaning that the bird reentered the trap on the evening of March 21, and that it had little or no food before its weight was taken the next morning. Also it apparently did not immediately regain its former weight.

The greatest loss of weight for a single individual as well as the minimum for any Golden-crowned Sparrow was recorded for no. A181228. This bird was first trapped on November 4, 1932, when it weighed 27.20 grams at 5:15 p. m. Its maximum weight, 32.05 grams, was recorded at 5:30 p. m. on January 18, 1933. On February 24, at the same hour it weighed 26.65 grams. At 9:30 a. m. on February 26, it weighed only 11.95 grams (reading checked three times) and was so emaciated that it obviously was dying. It was never recaptured. In forty hours this bird lost 55 per cent of its weight.

Table 7. Extremes and ranges of weights (in grams) of all Golden-crowned Sparrows trapped ten or more times.

Band No.	No. Records	Date	Minimum	Date	Maximum	Range
			Weight		Weight	
A181354	31	Apr. 4	27.50	May 3	33.45	5.95
A181228	18	Feb. 26	11.95	Jan. 18	32.05	20.10
A181224	29	Feb. 19	24.95	Mar. 6	33.15	8.20
C102031	18	Mar. 9	23.03	Nov. 5	28.90	5.60
C102043	16	Nov. 14	27.35	Jan. 9	32.55	5.25
C102019	13	Nov. 23	22.90	Nov. 6	25.80	2.90
C102048	11	Nov. 14	27.30	Mar. 29	34.05	6.75
C161001	22	Nov. 25	24.75	Dec. 2	28.80	4.05
C161182	21	Apr. 1	26.90	Feb. 21	31.90	5.00
C161152	20	Feb. 23	23.55	Feb. 8	32.85	9.30
A180823	18	Mar. 4	25.20	Mar. 30	31.10	5.90
A181217	26	Feb. 28	27.60	Feb. 20	33.30	5.70

C161037	18	Feb. 6	29.20	Apr. 18	39.60	10.40
C161060	25	Feb. 22	21.50	Feb. 2	30.10	8.60
C161080	62	Apr. 1	24.90	Mar. 18	30.25	5.35
C161095	34	Mar. 9	25.45	Feb. 16	30.55	5.10
C161120	52	Apr. 28	26.90	Feb. 15	34.35	7.45
C161122	21	Mar. 24	27.50	Mar. 14	34.65	7.15
C161129	20	Feb. 11	27.05	Feb. 14	35.20	8.15
C161124	22	Mar. 22	27.05	Mar. 18	33.95	6.90
C161117	12	Mar. 19	28.40	Nov. 29	34.05	5.65
C161203	11	Mar. 1	29.65	Apr. 18	36.05	6.40
C161205	13	Feb. 22	29.65	Mar. 19	35.25	5.60
C161207	10	Feb. 6	25.80	Jan. 14	31.25	5.45
C161226	33	Mar. 20	23.50	Mar. 17	28.50	5.00
C161227	12	Feb. 11	25.50	Mar. 22	29.15	3.65
C161232	18	Feb. 22	28.20	Mar. 29	35.75	7.55
C161233	43	Feb. 26	26.95	Mar. 8	38.15	11.20
C161242	27	Mar. 21	23.25	Mar. 30	36.20	12.95
C161298	11	Mar. 31	28.05	Mar. 29	32.20	4.15
C161306	18	Apr. 25	28.15	May 1	34.60	6.45
C161111	18	Mar. 19	22.20	Mar. 24	29.20	7.00
C161326	12	Apr. 4	26.15	Mar. 30	30.60	4.45
C161330	22	Mar. 24	24.60	May 9	36.85	12.25
C161333	24	Apr. 4	24.95	Mar. 18	30.30	5.35

Obviously, it is impossible to measure the complete seasonal change in weight for every individual trapped in the wild. Table 7 shows the minimum and maximum weights, the dates for those records and the range for each Golden-crowned Sparrow trapped ten or more times. These incomplete records for thirty-five birds show seasonal ranges in weight from 2.9 to 20.1 grams, averaging 7.05 grams. These amounts seem large in comparison with the small average range for one day. However, they help to emphasize that body weight is a widely variable character in these birds.

Table 8. Extremes and ranges of weights (in grams) of all Fox Sparrows trapped ten or more times.

Band No.	No. Records	Minimum		Maximum		Range
		Date	Weight	Date	Weight	
C102096	23	Mar. 24	30.00	May 1	39.35	9.35
A181364	19	Oct. 4	29.00	Mar. 1	35.40	6.40
A181359	20	Oct. 2	32.30	Feb. 17	36.90	4.60
A181358	17	Oct. 9	31.20	Nov. 22	37.35	6.15
C101970	53	Feb. 19	28.10	Nov. 6	36.10	8.00
C102064	66	Feb. 27	28.05	Dec. 2	38.35	10.30
C102097	38	Nov. 17	30.25	Mar. 30	38.00	7.75
C161005	10	Nov. 21	26.80	Nov. 9	35.10	8.30
C161048	21	Feb. 9	29.60	Feb. 4	36.80	7.20
C161186	13	Jan. 13	27.50	Jan. 17	32.85	5.35
C161049	11	Nov. 28	30.30	Dec. 8	33.75	3.45
C161044	17	Nov. 17	29.75	Mar. 7	38.45	8.70
C161191	17	Feb. 24	27.90	Feb. 10	35.60	7.70
C161192	16	Mar. 14	28.20	Mar. 7	36.15	7.95
C161213	21	Feb. 18	26.95	Mar. 14	34.40	7.45
C161221	10	Feb. 25	25.25	Feb. 3	31.70	6.45
C161206	11	Feb. 20	26.95	Feb. 14	34.60	7.65
C161235	39	Feb. 28	29.95	Mar. 29	37.20	7.25
C161064	16	Feb. 21	26.95	Feb. 15	40.80	13.85
C161259	10	Feb. 22	25.45	Feb. 17	30.65	5.20
C161262	24	Mar. 24	21.70	Mar. 17	27.85	6.15
C161318	43	Apr. 2	27.65	May 9	36.30	8.65

Table 8 shows for the twenty-two Fox Sparrows trapped more than ten times each, the extremes and dates of their recording. The individual seasonal ranges for these birds ran from 4.6 to 13.85 grams, average 7.49 grams.

The fact that maximum weights of individuals are not always in the seasons indicated in the earlier discussion as ones of high body-weight cannot be taken as

denial of the first implication. The individual birds are not represented by complete seasonal records. Certain individuals, also, failed to gain when the averages showed a high peak for the whole population.

The records we have studied affect our evaluation of single weight readings. We now believe that each reading should have with it locality, date, time of day, and, if possible, sex. Records without this accompanying information appear to us to have less value than we thought at first; records with it we consider of more value than we did formerly. That is, it has been impressed upon us again that weight of a bird is not a static quality but is one of continuous and ordered change.

The amount of fluctuation exhibited by individuals is great. The daily change seems to be much smaller than the normal seasonal change. The daily change is, obviously, mainly the result of the normal intake and outgo of food. The seasonal changes are, we think, mainly the result of the internal changes in the birds' metabolic activities which accompany the rhythm of the breeding cycle, including migration. But there is also weight change which is sometimes great and which comes from external influences. Possibly the early winter peaks in weights of the two species we have considered resulted from external factors favorable to the foraging or the nutrition of these kinds of birds.

The material contained in this report along with that in the two papers already cited appears to show the nature of the variations which occur in body-weight in the Golden-crowned and Fox sparrows. How generally the trends pointed out apply also to other kinds of birds we cannot say. However, analyses of weight in the House Finch (*Carpodacus mexicanus*) by Partin (Condor, 35, 1933, pp. 60-63) and of the Chaffinch (*Fringilla coelebs*) by Groebels (Der Vogel, 1, 1932, pp. 636-637), where they are comparable, exhibit remarkably close parallels with the records of the birds we have studied. Other species in a different family studied by Groebels (*loc. cit.*) show an entirely different type of seasonal rhythm in weight change. Thus it appears that records must be obtained for many more species before general conclusions may be drawn concerning variations in bird weights.

Summary.—Winter weight records (numbering 1422) for 286 Golden-crowned Sparrows and half as many (711) for 91 Fox Sparrows trapped at Berkeley in 1932-1933 show that both species reached one peak in weight in mid-winter and another, considerably higher one just before the spring migration. Supplementary records from other sources show the validity of the spring increase and indicate that high weight is maintained until arrival on the breeding grounds. The records confirm previous determinations that, on the average, weight increases during the day. Seasonal deviations in weight seem to be greater than other kinds which affect a single bird.

Museum of Vertebrate Zoology, Berkeley, California, January 19, 1934.

FROM FIELD AND STUDY

The Jay as a Benefactor of Man.—While on an afternoon hike on August 26, 1933, I flushed several groups of California Jays (*Aphelocoma californica*) at different points along my route from where they had been feeding on the ground in an extensive field near Benicia, Solano County, California. There were probably not less than forty birds feeding in this manner, and I suspect, judging from the size of the different assemblies, that they were various family groups still associated together.

Jays are usually found in the brush or heavy tree growth and do not ordinarily congregate in the open fields. It appeared that they were attracted to the fields by the abundance of grasshoppers, and in order to verify this assumption I collected

one of the birds. The stomach was found to be packed so solidly with grasshoppers and black ground beetles that it seemed ready to burst open. With little doubt the majority of this congregation of jays had been feeding on these destructive insects.

Personally, I like the jay and think it should be given some measure of credit rather than continual censure. From the esthetic viewpoint, at least, it is one of our most lively and beautiful birds. I consider that we are fortunate in this vicinity in having a large jay population, due in large measure to the fact that there have been no organized jay shoots about Benicia, a practice which in my opinion should be discouraged.—EMERSON A. STONER, *Benicia, California, August 31, 1933.*

Snowy Egret in a Mountain Forest.—During the six weeks ending September 16, 1931, a Snowy Egret (*Egretta thula brewsteri*) was observed daily by Mr. and Mrs. John Dillwood at Buck Meadow on Deer Creek, Fresno County, California. The elevation of 7,000 feet and the forested environment in low Canadian Life Zone make this occurrence worthy of record. Starting from the San Joaquin Valley, the bird could easily fly up the Kings River, then Dinkey Creek and later to its tributary, Deer Creek.

This incursion of cold climate environment through altitudinal wandering is a counterpart of latitudinal wandering into Nova Scotia and British Columbia, which places the Snowy Egret in Canadian Life Zone faunas a thousand miles northward. My identification of Mr. and Mrs. Dillwood's long observed bird as the Snowy Egret is by their size comparisons with the Great Blue Heron and Anthony Green Heron (with both of which they are quite familiar), and the fact that it had a black bill. It is significant to note the disappearance of the bird on the day "deer hunting" began.—ROLAND CASE ROSS, *Los Angeles City Schools, September 15, 1933.*

Nesting of the Red-breasted Nuthatch.—On page 210 of the September-October (1933) issue of the Condor there appears this statement: "Mr. Brighton C. Cain, who a year ago banded young Red-breasted Nuthatches in a nest box at the Scout Camp at Diamond Canyon near Oakland, has found a pair of the birds this year nesting just outside of the camp in a hole made by Downy Woodpeckers in a dead pine."

This statement brought vividly to my mind the difference in habits in the same species of bird in different sections of its nesting range. Here in Yosemite Valley it has been my experience that the Red-breasted Nuthatches (*Sitta canadensis*) never occupy old nest-holes of any sort. Each year the birds of a pair working in turn excavate a new nest-hole. Often they dig two, or three, or possibly four prospect holes before finally deciding on the one that is to be the nest-hole of the season. Most often they choose to work in the dead wood of a living cottonwood. The second choice of tree is the Kellogg oak, but I have also watched a pair of birds drill a nest-hole in the dead stub of a yellow pine. In one case the same pine stub was used two different seasons, but instead of using the old nest-hole, which appeared perfectly good, the birds quite ignored it and drilled out a fresh hole.

I have seen nests of the Red-breasted Nuthatch as low as five feet above the ground and as high as forty feet from the ground. The average height of the nest-hole above the ground is probably close to fifteen feet. In the Yosemite Valley, Red-breasted Nuthatches usually start to drill their nest-holes before the middle of April. For example, a pair of nuthatches that I had under observation began drilling on April 13, both birds working. April 20 the birds indulged in the mating act. May 1, began lining the nest with feathers. May 12, female incubating. May 19, male bird puts a ring of pitch around the nest-hole. May 23, the young hatched, and on June 10 they left the nest. Five days were spent in the tree-tops, and on June 15 the young birds came down and took a bath. June 21 the nuthatches were last seen together as a family group.

When feeding small young the parent nuthatch dives on the wing directly into the nest-hole. When the young are old enough to come to the entrance of the nest-hole the old birds alight just below the entrance. When the young nuthatches leave the nest they are in full plumage and they are much more handsome than their parents because their feathers are neither frayed nor ruffled.—CHARLES W. MICHAEL, *Yosemite, California, September 17, 1933.*

Magpies and Ferruginous Rough-leg Feeding Together.—In the Condor for July-August, 1933, Joseph Dixon reports three Magpies (*Pica pica hudsonia*) robbing a Golden Eagle of its prey. Apparently there may be association of a sort among birds of similar feeding habits.

On December 4, 1932, I was driving through southern Wyoming, and a few miles south of Tulsa I noticed a cluster of birds on the highway some distance ahead of the car, apparently feeding on the carcass of one of the numerous jackrabbits run over by cars. As I approached slowly I could see that three or four Magpies and a Ferruginous Rough-leg (*Buteo regalis*) were all practically "rubbing shoulders" as they busily tore at the jackrabbit remains. The Magpies were the first to leave at my approach, and the hawk flapped away reluctantly, to perch on a fence post until I should leave.

Curiously enough, on October 27, 1933, I was driving over that part of the road again and in almost the identical spot another jackrabbit had been run over and a group of birds was clustered about it, this time several Magpies in company with a crow (presumably *Corvus brachyrhynchos hesperis*). On returning over this road three days later, I found these birds still in that vicinity.

Ball and Court (Auk, 48, 1933, p. 604) in Maryland, observed a Magpie in company with some crows, being pursued by a kingbird. Hess (Auk, 31, 1914, p. 402) observed a Magpie in Illinois being "harassed by a half-dozen crows in a hedge." Cameron (Auk, 31, 1914, pp. 159-167), in his study of the Ferruginous Rough-leg, found remains of young Magpies at the nest, and also saw three Magpies alight near the hawk nest. Again, Munro (Condor, 31, 1929, p. 113) flushed a Goshawk from the "still warm body of a Magpie." Taverner (Auk, 36, 1919, p. 252) noted, in Alberta, that Magpie nests were invariably found not far from the nests of Red-tails or Swainson Hawks and wonders, if the proximity were not accidental, which species first chose the locality.

Apparently relationships among birds of prey, and between them and other species, vary with circumstances. I have known an Emperor Goose to hatch out its eggs in close proximity to the nest of a Snowy Owl. On the other hand, at least two Short-eared Owls, themselves raptors, in the same district fell prey to Snowy Owls.

Thus we see that at one time the Magpie is "harassed" by crows, and again the Magpies fraternize with crows amicably. We learn that young Magpies are the prey of a Rough-legged Hawk. On the other hand, a group of Magpies is found amicably feasting on carrion in company with a Rough-leg, when this hawk could easily have reached out and seized one of the birds. Which arrived at the carcass first, hawk or Magpie?

It is dangerous to speculate on mental traits of birds, but the subject is worth careful study, and more extensive observations by ornithologists may eventually throw some light on the influences affecting some of these relationships.—OLAUS J. MURIE, Bureau of Biological Survey, Jackson, Wyoming, December 29, 1933.

Another Emperor Goose in California.—While spending a few days in Glenn County last February I was introduced to Mr. Ralph P. Thompson of Willows who told me he had shot a strange looking goose on December 20, 1932. The bird was with a flock of Hutchins Geese and was the only one of the kind seen.

Failing to find anyone in Willows to preserve the specimen, he had roughly skinned the bird and dried the hide. As suspected, it proved to be an Emperor Goose (*Philacte canagica*), and on my suggesting that the Museum of Vertebrate Zoology at Berkeley would be a good place to preserve the record he gave me the evidence (skin) to forward there [now no. 63663].—R. H. BECK, Planada, Merced County, California, December 30, 1933.

Additional Fall and Winter Records for the Lutescent Warbler in California.—Among the specimens of the Lutescent Warbler (*Vermivora celata lutescens*) in the Los Angeles Museum are the following, all from Los Angeles County: Male (no. 2690) taken by J. Hornung at Greening, October 4, 1918; female (no. 10888) taken by F. S. Daggett at El Monte, December 16, 1898; male (no. 18230) taken by G. G. Cantwell

at Del Rey, January 8, 1934; and male (no. 13668) taken by C. H. Richardson, Jr., near Toluca, February 12, 1908.—G. WILLETT, *Los Angeles, California, January 12, 1934.*

Records of Lesser Snow Goose and Whistling Swan in Arizona.—Swarth's Distributional List (Pacific Coast Avifauna No. 10, 1914, p. 14) gives the status of the Lesser Snow Goose (*Chen hyperborea hyperborea*) in Arizona as follows: "There is a record by Coues (1866a, p. 98) of 'specimens taken near Fort Whipple, Oct. 17, 1864.' Seen on the Colorado River, near Needles, February 16 and 23, 1910 (Mus. Vert. Zool.)." So far as I can determine there has not been any additional record of this species published since the appearance of Swarth's work. It therefore seems worth while to place the following occurrence in the record.

Two geese of this species were killed on a large represo at Sells (Indian Oasis), the Indian Agency of the Papago Reservation 60 miles west of Tucson, on September 18, 1922, by Mr. J. G. Upham and Mr. A. E. Crepin, of Tucson. One of these birds was brought to me in the flesh by Mr. Upham for identification. I carefully checked the identity of the bird, but did not record in my notes what authority was used for that purpose. I feel sure, however, that I used the Game Birds of California, by Grinnell, Bryant, and Storer, with its excellent diagnostic sketches of the beaks of the Lesser Snow Goose (fig. 30) and the Ross Goose (fig. 31).

It seems an odd coincidence that Swarth's list should show not only the same number of occurrences of the Lesser Snow Goose and the Whistling Swan (*Cygnus columbianus*) in Arizona, but in the same years. Concerning the latter species Swarth says (p. 15), "Recorded by Coues (1866a, p. 98) from the Colorado River and Fort Mojave. There is a recent record of its occurrence at Sacaton, Pinal County, November 21, 1910 (Gilman, 1911a, p. 35)."

One additional record has since appeared in the literature. W. B. Mershon, under date of March 22, 1919, reported the appearance of eleven swans about the middle of the previous December on Howard Lake, near Williams, Arizona (Condor, 21, 1919, p. 126). Two of the birds had been collected and preserved, one of which was seen by Mershon and identified as of this species.

On December 3, 1919, a young Whistling Swan was brought to the University aviary. This bird had alighted some days previously in a ranch yard about 4 miles south of Tucson. It was apparently uninjured but not disposed to fly. It was in exceedingly poor flesh and could walk only with difficulty. It swam across the small pool in the aviary but immediately landed and staggered to a resting place. Efforts to induce it to take food were unavailing and although some food was put down its throat it refused to make any effort to feed itself. The bird died the following day.

On December 15 another specimen of *columbianus* was brought to the University. This one, also young, was killed by a hunter who claimed to have mistaken it for a goose. It was taken in the valley east of the Baboquivari Mountains, about 65 miles southwest of Tucson, where there is a fairly large lake and a number of smaller reservoirs or represos.

At the time of recording the above occurrences it was supposed that these birds might appear here more frequently than the literature showed, but no further reports have since come to my attention, save one. A Phoenix news item, about 1919 or 1920, stated that a swan dinner had been tendered his friends by a Salt River Valley hunter (whose generosity was greater than his knowledge of the law) who, in consequence, had been arrested and fined a substantial sum. I do not have the date of this incident.—CHARLES T. VORHIES, *University of Arizona, Tucson, December 1, 1933.*

English Sparrows Make Nuttall Sparrows Trapwise.—In the Condor (31, 1929, p. 192) there is an article by the present writer giving his experiences in Golden Gate Park, San Francisco, California, when banding Nuttall Sparrows (*Zonotrichia leucophrys nuttalli*), wherein is set forth this bird's habit of colonizing in small groups, closely adjacent to one another, of which the respective members seldom mingle with those of other groups.

Since that paper was written changes have taken place on that banding ground, close to the California Academy of Sciences and the Steinhart Aquarium, that have

ruined it for banding purposes as far as the Nuttall Sparrow is concerned. In the very best place now stands the East Wing of the Academy buildings. In other places bushes have grown into trees or have been removed and the sparrows have been driven to other cover. However, along the main road and the adjoining parking space across from the Academy two parallel rows of close-cut hedge, mostly of escallonia, have grown to such size and thickness as to make a good shelter and have been much frequented by the Nuttall Sparrows. On the north side of the outer hedge there is a walk, lined with benches, whereon many people sit in pleasant weather and often scatter crumbs for the birds. As the old places were no longer suitable for banding birds the scheme was tried, of setting traps among these benches in the earlier part of winter mornings, before park visitors were apt to appear in large enough numbers to interfere with the work. Even then it was necessary to keep watch over the traps for fear of pilfering by strolling youngsters.

The Nuttalls were very tame here and at first would readily enter the traps, but invaders soon appeared in the shape of the almost ubiquitous English Sparrow. During the former trapping an individual of this species would occasionally appear at a trap, even when this was under the bushes, and once in a while one would be caught, but no serious trouble occurred. Out in the open, however, among the benches on the pathway the English Sparrow became rather numerous and would clean up all the bait that was outside of the traps, but not a single one would cross a threshold. After the arrival of these invaders the number of the Nuttall Sparrows caught rapidly diminished until, in a day or so, not a single bird of this species would enter a trap—not even those that had been accustomed to enter the traps up to the time of this invasion—so that the pathway scheme had to be abandoned.

A last effort to attract the Nuttall Sparrows was made by placing under a cypress tree that was out of sight of passers-by, a rectangular trap of wire netting, 36x24 inches in area and 6 inches high, with one side propped up and with bait scattered under and around it. This trap was visited several times a day for several days and the bait replenished as needed to replace what was taken by mice or rats during the night. All the bait outside of the trap area was soon taken by the birds but not a single sparrow was noted inside of it!

As above mentioned, the Nuttalls had freely entered the traps before the appearance of the English Sparrows upon the scene. They had not only entered but, after being banded, had kept repeating their visits, some Nuttalls even entering the traps several times a day. Evidently a fear of the traps had become fixed in the brains of the Nuttall Sparrows either by means of direct communication from the English Sparrows or by force of example. Which was it?—JOSEPH MAILLIARD, *California Academy of Sciences, San Francisco, January 1, 1934.*

Midwinter Occurrence of Costa Hummingbird in California.—At about midday on January 9, 1934, I saw a male Costa Hummingbird (*Calypte costae*) in my yard at Azusa, California. The bird, which was active and in good plumage, disappeared after feeding briefly at the blossoms of a flowering quince, and was not seen again during the month.

Referring to the recently published *Pacific Coast Avifauna Number 21*, this appears to be the first known occurrence of the species on the Pacific slope of California between the months of September (26th) and February (20th). As a matter of record, it may be added that the present winter has been an exceptionally mild one in this locality. Evidently this fact did not, however, influence the migration of the Allen Hummingbird (*Selasphorus alleni*), which was first seen on January 30, about the normal date.—ROBERT S. WOODS, *Azusa, California, January 31, 1934.*

Some Records from Southern California.—In recently reviewing some personal notebooks covering observations over the past eleven years, I find the following records which may be worthy of note. With but one exception, field identification only, constitutes the evidence; but in every case such identification has been carefully made at close range. Mr. George Willett of the Los Angeles Museum has kindly checked these records.

Egretta thula brewsteri. Western Snowy Egret. One bird was observed on

August 27, 1926, at Playa del Rey along the edge of an inlet. Identification was based upon its size as compared with that of several gulls standing very close to the egret, the latter standing only a little higher than the gulls and having a body roughly comparable with theirs in size. On March 21, 1932, another bird was seen near the Bolsa Chica Gun Club, Orange County. On February 21, 1933, two birds were noted, each at a different point between Seal Beach and the Bolsa Chica Gun Club.

Elanus leucurus majusculus. White-tailed Kite. An adult was observed in late January, 1931, in a field near Balboa Beach. When the same locality was visited a week later, the bird was not seen.

Pandion haliaetus carolinensis. Osprey. On July 22, 1925, at Laguna Beach a bird was seen at rest on a tall pole and also in flight.

Totanus melanoleucus. Greater Yellow-legs. A one-legged bird was observed on July 21, 1927, at Oceanside, San Diego County.

Sitta carolinensis aculeata. Slender-billed Nuthatch. One bird was seen on August 31, 1925, at Sunland (within the northern city limits of Los Angeles).

Bombycilla cedrorum. Cedar Waxwing. A small flock, apparently of migrants, was seen on the rainy afternoon of May 21, 1933, in Pasadena.

Loxia curvirostra subsp. Crossbill. A dead male with distinctly yellowish tinged plumage was found on March 25, 1923, near Pasadena, at the base of a eucalyptus tree. It apparently had been dead only a short time.—LYDIA BOWEN, Pasadena, California, January 17, 1934.

The Lower California Say Phoebe in Southeastern California.—Two Say Phoebes secured by the writer in November and December, 1933, on the shore of Salton Sea, near Kane Springs, Imperial County, when compared with specimens of *Sayornis saya* from coastal localities exhibited color characters setting them off from the typical subspecies. As there were no comparable examples of *S. s. quiescens* in the Los Angeles Museum, these two birds were forwarded to Dr. Joseph Grinnell at the Museum of Vertebrate Zoology, where they were examined by him and identified as of the Lower California form. Nine additional specimens secured later in the same region all appear to represent the same race. The above eleven birds were all taken within ten miles of Kane Springs, between November 26, 1933, and January 9, 1934. On January 23, 1934, two Say Phoebes were secured on the Coral Reef Ranch, Coachella Valley, Riverside County. One of these is apparently typical of *quiescens*, and the other is somewhat intermediate between that race and *S. s. saya*.

In attempting to define the status of *quiescens* in the Colorado Desert region, a rather puzzling problem arises. While the two races, in fresh plumage, are readily separable, the writer is unable to detect differences between breeding birds, which are all more or less worn. An examination of two spring birds in the L. B. Bishop collection, one taken at Calexico, March 9, 1926, and the other at Fort Yuma, March 25, 1929, fails to clarify the situation as the plumage of these specimens is so badly worn that it seems impossible definitely to assign them to either race. Therefore, while it is apparent that the winter Say Phoebe of the Salton Sea region is mainly, or entirely, the same as the bird of Lower California, whether the breeding bird is of the same race is not yet determined.—GEORGE WILLETT, Los Angeles Museum, Los Angeles, California, January 29, 1934.

Louisiana Herons at San Diego.—On February 10, 1934, E. H. Glidden, state fish and game warden, and the writer, while making a local census of Black Brant, saw two Louisiana Herons (*Hydranassa tricolor ruficollis*) on Mission Bay, which is within the city limits of San Diego. They were in the company of three Snowy Egrets, and were watched for some time at close range through 8-power binoculars as they scampered with surprising activity over a mud-bank in search of food. There was no question of their identity. Incidentally, the Brant count netted 161 individuals, three flocks of 61, 51 and 42 on Mission Bay, and a group of 7 on San Diego Bay. An Osprey (*Pandion haliaetus carolinensis*) was several times observed at Mission Bay, once carrying a fish.—CLINTON G. ABBOTT, San Diego Society of Natural History, San Diego, California, February 24, 1934.

The White-necked Raven, a Change of Status?—Since definite records of changes of distribution of species are not over-abundant, the following observations seem worthy of note. On my arrival in Tucson in September, 1915, I found an avifauna largely new to me. Very shortly, however, an abundance of White-necked Ravens (*Corvus cryptoleucus*) forced this species on my attention. They were common on the outskirts of the city, and since the University campus was at that time contiguous to the desert, and the dining hall dumped quantities of garbage on the outermost (eastern) edge of the campus, the ravens were frequently present in the autumn and winter to the number of from 100 to 200. My notes (how inadequate now in view of changed conditions) say "White-necked Ravens come within the city in great numbers in November and December. Later in the winter they scatter more widely and in February and March are scarcely seen in the city limits, but are found along the irrigated farm area in the Santa Cruz valley".

In late autumn of 1915, I believe November, though I lack an exact date, I noted at sunset a gathering of many hundreds about two miles north of the city near the Oracle road. I supposed they were gathering to roost nearby, but other business which could not be postponed forbade following the observation to a conclusion. Two weeks later I went out for the express purpose of determining the facts but found no indication whatever of a roosting colony, nor have I ever since seen such indication either at that site or elsewhere about Tucson.

Well do I remember these ravens, to the number of 25 to 50, on mid-winter afternoons holding conversation in the big cottonwood trees on the north edge of the campus, in full view of my then office window and of the laboratory. After a satisfying meal from the garbage pile they gathered in these immense trees to preen and sun themselves.

Within a couple of years the garbage dump was cleaned up, the surrounding desert began to be occupied and we became aware that the ravens were no longer with us. Still we had no inkling what changes were to follow, for the city maintained a large garbage dump along the Santa Cruz River bed a mile or two northwest of the city, and at intervals when passing in that direction I noticed the large flocks of White-necked Ravens there. Also, at a rather primitive old slaughter house on the southwest edge of the city, these birds were plentiful.

How simple to take note of the positive; how prone to fail to note negative facts! In the next few succeeding years the city built a garbage incinerator, and the old slaughter house was abandoned either through pressure of competition or of sanitation. During just this period of years a multiplicity of other duties prevented any save the most casual bird observations (even my field work took me out of town by other routes), and before I was aware what had happened the White-necked Ravens had departed from their former haunts. Not only that, but now it seems the species is absent, or at least no longer present in flocks anywhere along many miles of the Santa Cruz valley, above and below Tucson.

It is interesting to compare Swarth's record of this species (Pacific Coast Avifauna No. 10, 1914, p. 46) with the above. He says: "Has been observed only in the extreme southeastern corner of Arizona, in Cochise County, and west and north to Oracle, Tucson, and the valley of the Santa Cruz River. It is . . . mainly a summer visitant to the region. Some remain throughout the winter in favorable localities". He cites then a November record for Willcox, by Bailey, and a February record for the San Pedro River, by Willard.

Mrs. Bailey recorded them (Pacific Coast Avifauna No. 15, 1923, p. 34) at frequent intervals from February 21 to April 20, 1921, along the Santa Cruz bottoms at Continental and occasionally along the higher slopes of the valley sides. Fortunately, there is one definite record for as late as 1925, when Stephen C. Bruner (Condor, 28, 1926, p. 235) wrote: "On the outskirts of Tucson, especially along the Santa Cruz River bottoms, these ravens are extremely abundant, more than two hundred being counted on the morning of February 13, seventy of which were seen together in a group of three trees".

Swarth believes (Proc. Calif. Acad. Sci., Ser. 4, 18, 1929, p. 314) that this species belongs primarily in the higher plains region east of the Santa Rita Mountains, to which apparently it has now withdrawn. I have no record or recollection of having

seen White-necked Ravens in the Santa Cruz Valley in the past few, probably the last five years. Dr. Walter P. Taylor, of the U. S. Biological Survey, stationed in Tucson since 1922, agrees that these birds seem to have been absent for some time; but our records alike fail to show when they last occurred.

Would that I had a movie record of the soaring, circling flight of a flock of these birds as they took off from the old garbage dump—a flight more like that of a group of buzzards or hawks than like crows. The last such flight seen was in November, 1931, in Sonora, Mexico, between Magdalena and Hermosillo.

One seems almost forced to the conclusion that the most significant ecological factor in this change of status is the unsanitary garbage dump!—CHARLES T. VORHIES, *University of Arizona, Tucson, December 1, 1933.*

NOTES AND NEWS

The Ninth Annual Meeting of the Cooper Ornithological Club, held in San Diego under the auspices of the San Diego Society of Natural History, proved one of the most intellectually profitable as well as entertaining meetings in the history of the Club. Secretarial reports of this series of meetings will be found elsewhere in this issue of the *Condor* (pp. 126 to 129).

On January 19, 1934, a meeting of local bird students was held in the Jordan Room of Jordan Hall, Stanford University, for the purpose of organizing a Stanford Chapter of the Northern Division of the Cooper Ornithological Club. Appropriately, the day chosen was the birthday of Dr. David Starr Jordan. Dr. Isabel McCracken presided, Dr. Willis H. Rich was elected president for the ensuing year, and Miss Clare McGee served as temporary secretary. At a subsequent meeting the first Thursday of each month was chosen as the date for meetings. The eleven members and two guests present to form the chapter were: Alice H. Baldwin, Mrs. O. D. Baldwin (guest), Mr. and Mrs. John E. Borchert, Mrs. Marie F. Greene, Dr. Isabel McCracken, Clare McGee, Mrs. Adelaide H. Perry, Dr. Gayle Pickwell, Lea Reid, Gladys M. Relyea, Dr. Willis H. Rich, and Anna L. Wright. The great amount of interest being shown in the Stanford Chapter of the Cooper Club is indicated by the fact that the attendance at the later meetings runs between sixty and seventy members and guests. Minutes of the Chapter will be recorded in the *Condor* regularly, beginning with this issue (see page 123).

The Library of Congress has recently received as a gift from Ruthven Deane his famous collection of photographs of

ornithologists. A count made after receipt of the collection lists about 1,800 items, the result of the devoted efforts of the past fifty years. The photos include likenesses of ornithologists from all parts of the world; in some cases there are from two to ten of the same individual at different ages. The collection is composed mostly of studio photos, but there are many "snap shots" that were taken in the field, and also group pictures such as are taken at the A. O. U. meetings. The collection is unique. Nothing to compare with it exists in this country and probably not in Europe. Years ago Dr. Paul Leverkühn, of Sofia, Bulgaria, started such a collection, but it is not known what became of it after his death. Deane's accumulation of likenesses is well-nigh all inclusive, at least as regards American ornithologists, with this reservation, that there are probably some of the younger men who have come to the fore in recent years who are not represented therein. It is hoped that the collection will continue to grow in its new surroundings. —H. S. S. [The copy for the above note had just been received back from Ruthven Deane, to whom it had been sent for verification, when the sad news came, of his death, on March 20.—Editors.]

Pacific Coast Avifauna number 22, published March 31, 1934, by the Cooper Ornithological Club under the authorship of Harry S. Swarth, is an account of the "Birds of Nunivak Island, Alaska" (64 pp., 4 ills.). It is based upon collections and observations gathered by the late C. G. Harrold during an Alaskan trip made in the interests of the California Academy of Sciences in the summer and fall of 1927. Besides the field observations, important

for the ornithology of northwestern America are Swarth's discussion of distributional matters and his comments upon the systematics of several birds. This new number in the Avifauna series may be had

or resident, had no measurable influence on carrying capacity [of quail habitats], despite heavy quail mortality sometimes due to predation. Material winter losses from predators have pointed to quail

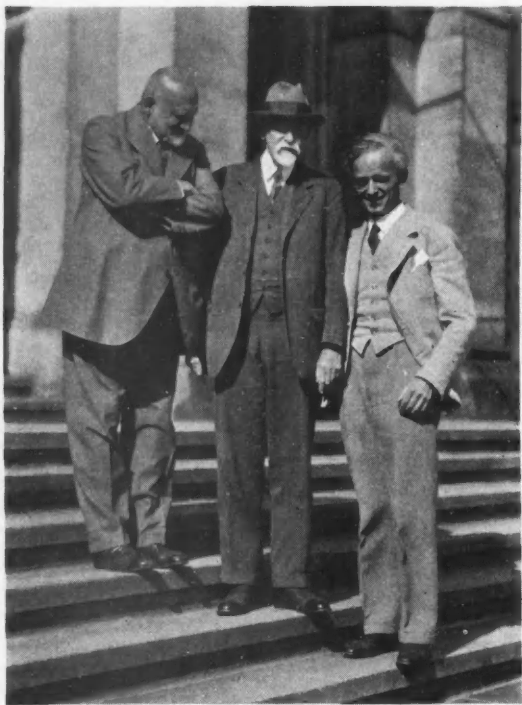


Fig. 23. From left to right: Oscar Neumann, Ernst Hartert (now deceased), and Erwin Stresemann. Photo taken in Berlin, September 5, 1933, by A. J. van Rossem. Dr. Stresemann is President of the VIII International Ornithological Congress, to convene in London, July 2 to 7 this year.

for \$2.00 from W. Lee Chambers, 2068 Escarpa Drive, Eagle Rock, California.—J. G.

Another of Dr. Paul L. Errington's careful studies of quail mortality appears in the current issue of *Ecology* (15, April, 1934, pp. 110-127). Under the title "Vulnerability of Bob-white Populations to Predation" he concludes that, among the things his field work showed, "kinds and numbers of wild predators, migrant

populations top-heavy for the environment. Stated otherwise, the predators consumed mainly an ill-situated surplus." Current indications are that wild-life administration, in practice, is beginning to heed the findings of qualified naturalists, such as these, which point toward the preservation of the entire biotic community as being the best course to pursue, in economic as well as all other interests. The outlook to conservationists begins to brighten a bit.—J. G.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

JANUARY.—The January meeting of the Northern Division of the Cooper Ornithological Club was held at 8:00 p. m. on Thursday, January 25, 1934, in Room 2003, Life Sciences Building, Berkeley, with Vice-president Miller in the Chair and about seventy-five members and guests present. Minutes of both Divisions for December were read and those of the local Division approved.

Dr. Pickwell proposed the following names for membership: Miss Alice Baldwin, 135 S. 17th St., San Jose, Calif.; Mrs. Georgia B. Borchert, 635 Homer Ave., Palo Alto, Calif.; Mrs. George L. Green, 455 Williams St., Palo Alto, Calif.; Miss Effie B. McFadden, 496 Crestlake Drive, San Francisco, Calif.; Miss Clare McGee, Box 1796, Stanford University, Calif.; Miss Lea Reid, Box 565, Redwood City, Calif.; Miss Gladys M. Relyea, 660 Salvatierra St., Palo Alto, Calif.; Mrs. Willis Wagner, 141 Woodland Ave., Palo Alto, Calif.; and Miss Anna L. Wright, 460 Oberlin St., Palo Alto, Calif. Mr. Knox Borden, 1669 W. Acacia Ave., Stockton, Calif., was proposed by J. Grinnell, and Mr. Howard Twining, 6160 Acacia Ave., Oakland, Calif., by T. T. McCabe, through the Western Bird-banding Association.

The set of resolutions drawn up by the Southern Division Committee on the Present Status of Ducks and Geese in California and adopted by that Division was discussed, and on the motion of Mr. Dixon, seconded by Mrs. Bracelin, unanimously adopted by the Northern Division.

Your Committee has made a study of numerous reports from competent authorities on the wild fowl situation in California. The tabulation of these reports shows that without question the ducks and geese are decreasing yearly at an alarming rate.

After checking these discouraging reports your Committee recommends a closed season on all ducks and geese for a period of years until the stock can be greatly increased over the present meager supply. We believe that if more protection is not given this very valuable natural resource at once, then it is in grave danger of being wiped out in a very few years. However, if an absolute closed season can not be had, we recommend and ask for:

1. At the most not more than 80 days open season, preferably in the early fall, closing by November 15 at the latest.
2. Cut the daily limit to 6 ducks and 3 geese per day, with a possession limit the same; weekly limit, 10 ducks and 4 geese.
3. Absolute elimination of the gun of more than three shots.
4. No shooting over baited grounds.
5. No live decoys.
6. No shooting by guides.
7. Much better protection by a larger warden service, especially on the shooting grounds and refuges.
8. More cooperation between the courts and real sportsmen so that violators will not escape with ridiculously low fines, or no punishment at all.
9. We are in favor of the Duck Stamp Bill of

1933. 10. It is suggested that a copy of these resolutions as passed by the Southern Division of the Cooper Ornithological Club be sent to the Chief of the Biological Survey and the Fish and Game Commission of California.

Committee: (signed) Wright M. Pierce, J. R. Pemberton, G. Willett.

The Chairman announced that because of the holiday on the fourth Thursday of February the meeting in that month would be held on the third Thursday. Mrs. Allen reported for the Contest Committee that any members wishing to take part must so indicate before the close of the evening. As Chairman of the Nominations Committee, Mrs. Allen presented the names of the incumbent officers; Mr. Dixon moved that the nominations be closed and the Secretary be instructed to cast a ballot for the present officers, namely: President, Gayle Pickwell; Vice-president, Alden Miller; Secretary, Hilda W. Grinnell. It was so voted.

Mr. Ben Thompson presented the following resolutions and explained the need for their support:

WHEREAS, it has been called to our attention that the budget for the Bureau of Biological Survey of the United States Department of Agriculture, as proposed for the period beginning July 1, 1934, entirely eliminates the appropriation for "Food Habits of Birds and Animals" and the project for investigation of migratory birds under the appropriation "Protection of Migratory Birds", and greatly decreases the appropriation "Migratory Bird Conservation Refuges", and

WHEREAS, it is the unanimous opinion of the Northern Division of the Cooper Ornithological Club that proper administration of our bird and other wild life resources cannot be carried on unless supported by exact knowledge gained through scientific investigation of the feeding habits of birds, their distribution and migration, and the areas suitable for refuges, all of which is necessary for the proper conservation of the great values inherent in these National resources;

THEREFORE, BE IT RESOLVED THAT we, members of the Northern Division of the Cooper Ornithological Club petition our Congressional delegation to urge the availability of funds for (1) Scientific Investigations of Food Habits of Birds and Animals, for (2) Protection and Investigation of Migratory Birds, and, in as great a measure as were last year available, for (3) Migratory Bird Conservation Refuges, and

That this expression of opinion applies strictly to items above specified and does not imply endorsement of animal control policies of the Bureau of Biological Survey, more particularly the poisoning of animal life which by our previous actions of November 24 and December 29, 1931, have been condemned by both Divisions of the Club, and

That a copy of these resolutions be spread upon our Minutes; and that a copy be sent to the Subcommittee of the House of Representatives appointed to handle the Agricultural Appropriation Bill.

Upon the motion of Mr. Dixon, duly seconded, the resolutions were unanimously adopted.

Mr. Grinnell announced the publication, in December, of the "Birds of Marin County," a sixteen-page brochure sponsored by the Audubon Association of the

Pacific and compiled by Mrs. Laura A. Stephens and Miss Cornelia C. Pringle. This very helpful booklet is based on 56 trips afield in Marin County made by Association members during the last fourteen years.

Vincent Mowbray reported a Lincoln Sparrow seen at his Oakland home on the meeting date, two Ancient Murrelets seen at Shelter Cove on December 28, and an American Scoter noted the same day at Half Moon Bay. Howard Twining reported three flocks of Western Evening Grosbeaks seen at Echo Lake, Eldorado County, on January 4. Dr. Miller told of observing Black-billed Magpies and three Nuttall Woodpeckers on the east side of the Sierra, in the vicinity of Owens Lake, during the Christmas holidays.

The evening's talk was by Mrs. Ynes Mexia on "A Jurassic Bird in Modern Feathers". In the clear and entertaining way we have come to look forward to, Mrs. Mexia described the life history of this anomalous bird, the Hoactzin, from observations made by her during weeks spent in its native habitat along the tributaries of the Amazon.

Adjourned.—HILDA W. GRINNELL, *Secretary*.

FEBRUARY.—The February meeting of the Northern Division of the Cooper Ornithological Club was held at 8:00 p. m. on Thursday, February 15, 1934, in Room 2003, Life Sciences Building, Berkeley, with President Pickwell in the Chair and 103 members and guests present. Minutes of both Divisions for January were read and those of the local Division approved.

The name of Kenneth Racey, 3262 West First Ave., Vancouver, B. C., was proposed for membership by T. T. McCabe, and that of Anna Margaret Smith (Mrs. Otis H. Smith), 89 Elm Ave., San Anselmo, Calif., by E. L. Sumner, through the Western Bird-banding Association.

A press clipping was read by the secretary announcing a drive proposed to be held by the Salinas Sportsmen's Association for the purpose of destroying all birds and mammals thought harmful to game birds. President Pickwell commented on the extreme liability of very many harmless song birds, beneficial hawks and owls, and the rare White-tailed Kites becoming the prey of over-zealous hunters and asked whether the Division wished to take action in the matter. Mr. Swarth moved that the secretary be instructed to write to the Salinas Sportsmen's Association registering a vigorous protest against

such wholesale shooting, and specifying our objections. The motion was duly seconded and unanimously carried.

Miss Wythe read an announcement of the coming program contest sponsored by the Northern Division and stated that in order to accommodate all speakers before summer it would probably be necessary to hold a special meeting in addition to the regular monthly meetings.

Dr. Pickwell announced the beginning of the nesting season, as denoted by the sight on February 11, of a pair of Golden Eagles courting high in air above Alum Rock Park, near San Jose, and the gathering of nesting materials by Anna Hummingbirds on February 13 and 14. Mr. Dyer reported that Plain Titmouses, Vigors Wrens and California Thrashers were building at his home, and that the Thrashers were first detected carrying nesting material on the same date as last year, February 12, although the season this year seems much more advanced. Mrs. G. L. Bamford exhibited an unusually beautiful nest of the Cassin Vireo, secured last summer in Lake County. Habits of Pallid Horned Larks were discussed by Mr. Swarth who found the birds in British Columbia gregarious during the nesting season, but in the molting season of July and August solitary and skulking in the grass, the latter trait not noted by him in other races of Horned Larks. Dr. Pickwell stated that in Mount Rainier Park he had found young of the Pallid Horned Lark out of the nest in early July, but had not marked a solitary habit of the adults at that time. Mr. Ian Cowan said that he had found the Pallid Horned Larks near Vancouver, B. C., nesting in early June at 5500 feet altitude, earlier by three or four weeks than the Pipits, and that molting adults were there very wild. Mrs. Ian Thompson reported a Yellow-shafted Flicker seen on January 18 in North Berkeley.

The evening's speaker was Mr. Joseph Grinnell who described "October Bird Life in Death Valley". His talk dealt with the types of bird habitats existing in Death Valley below the sea-level contour and the ways in which human occupation of the Valley has changed habitat conditions in the seventeen years which have elapsed since his first visit to the locality. Among birds not noted on earlier visits were the Woodhouse Jay, Verdin, and Rocky Mountain races of Red-winged Blackbird and Horned Lark. Two mysterious birds flushed at twilight from the long grass beside an irrigation ditch were tentatively

suggested to have been Bobolinks. In the discussion which followed, reference was made to the six known records of this bird for California. Mr. Richard Lewis added that he had seen a bird believed to be a Bobolink in Mono County last summer.

Adjourned.—HILDA W. GRINNELL, *Secretary*.

STANFORD CHAPTER

JANUARY.—Thirteen Palo Alto and San Jose bird students and their guests met in the Jordan Room of Stanford University on January 19, 1934, Dr. Jordan's birthday, to organize a branch of the Northern Division of the Cooper Ornithological Club. With Dr. McCracken presiding, election of officers was the first business considered. Dr. Willis H. Rich was unanimously elected President after Dr. McCracken had declined the nomination. After some discussion, it was decided to have a temporary secretary until more San Jose people should be present, from whose numbers it was suggested a permanent officer be elected. Miss Clare McGee was elected to fill the temporary position.

It was suggested that the President, the Secretary and a third person chosen from the group by these two officers, form the program committee for monthly meetings which will be held on the third Friday night of each month in the Jordan Room, Jordan Hall (Zoology Building), Stanford University.

Dr. McCracken suggested organizing an ornithology library in the Natural History Museum for the use of Club members. Local dues were discussed and considered unnecessary, and Dr. Rich made the suggestion that each member bring five self-addressed, stamped post cards for the secretary's use in sending monthly meeting notices.

Alice Baldwin suggested that an account of the first meeting and plans for the future should be sent to the Stanford Daily and she was asked to carry out the suggestion. In consideration of a name to be submitted to the Northern Division for approval, the Charter Members accepted "Stanford Chapter of the Northern Division of Cooper Ornithological Club."

New members paid the annual dues of three dollars (plus seven cent tax) and Dr. Pickwell took the new names to submit to the Northern Division for approval. The question as to whether provision for Associate Membership of a second mem-

ber of a family had ever been made, was asked, but according to Dr. Pickwell, the custom is not observed in Cooper Club organization.

Following a brief history of the Jordan Room, the Barbara Jordan collection of birds of various countries was exhibited, and the meeting adjourned. — (Miss) CLARE MCGEE, *Secretary*.

FEBRUARY.—The second meeting of the Stanford Chapter of the Northern Division of Cooper Ornithological Club was held on Friday, February 16, at 8:00 p. m. in Room 430, Jordan Hall, Stanford University, with thirty-five members and guests present. Dr. Willis Rich presided, and under new business the motion was made by Miss Alice Baldwin, and unanimously carried, that the meeting date be changed from the third Friday to the first Thursday evening of each month. The next meeting will be March 1.

Dr. Pickwell was asked to make a report of the Salinas eradication campaign against vermin, a question that was discussed in the Northern Division meeting on February 15. Discussion of the advisability of the Stanford Chapter taking action to lend more force to a protest against such a contest was followed by instructing the Secretary to send a letter of objection to the Salinas group carrying on the contest, and copies to the California Fish and Game Commission and the Palo Alto Times. A committee was appointed by the President to report at the next meeting on the advisability of approaching the City Planning Commission of Palo Alto about destruction of habitat and breeding grounds of salt marsh birds by reclaiming land along the Bay for planting.

Mrs. Borchert expressed a desire to see Mr. John Price's pictures at a club meeting. Under field notes, Mrs. Borchert reported seeing a bird that she thought was a Cuckoo; Miss Baldwin requested that members report the locations of bush-tit nest building activities in Palo Alto or Stanford; three Palo Alto colonies of breeding mockingbirds were reported; one mockingbird was seen on Alvarado Row on the Campus, but the one of past years near the Physiology Building has not yet been seen. Announcement was made of the Santa Clara Audubon Field Trip to Alum Rock Park, February 17.

The speaker of the evening was Dr. Gayle Pickwell, and as President of the Northern Division, he extended official

welcome to the newly formed Stanford Chapter from the Northern Division. The title of his illustrated talk was "Some Observations of Horned Larks." He compared the number of races of the one species in North America with the greater number of races of Song Sparrows which are restricted to North America. He explained that necessities for forming subspecies are plasticity of acceptable environments, and sessile rather than migratory habits. The horned lark inhabits fringes of desolation, finding man-made desolation where it is not found naturally. Dr. Pickwell gave in detail the distribution and habitats of the North American races and descriptions of the nesting places of the California Horned Larks in the immediate vicinity of Santa Clara County.

Adjourned.—(Miss) CLARE McGEE, *Secretary*.

SOUTHERN DIVISION

JANUARY.—The regular monthly meeting of the Southern Division of the Cooper Ornithological Club was held at the Los Angeles Museum, Exposition Park, Los Angeles, at 8:00 p. m., Tuesday, January 30, 1934. Thirty members and guests were present and President Robertson occupied the Chair. The minutes of the Southern Division for December were read and approved. Minutes of the Northern Division for December were read.

Applications for membership were presented, as follow: Paul Austin, R. R. 1, Box 28-A, Pasadena, California, by Mr. Robert T. Moore; Catherine C. Campbell (Mrs. Ian), 627 Drexel Place, Pasadena, California, and William Bebb, 431 East Washington St., Oakland City, Indiana, by W. Lee Chambers; Frank Watson, 7103 Waterman Avenue, St. Louis, Missouri, by David Duncan, III; H. G. Deignan, 7604 Alaska Avenue, N. W., Washington, D. C., by A. Wetmore; and Lester H. Cushman, Southern California Junior College, Arlington, California, by John McB. Robertson.

The secretary read a copy of certain resolutions passed by the Northern Division of the Cooper Ornithological Club at their meeting on January 25, 1934 (see p. —). On motion made by Dr. Miller, seconded by Mr. Willett, and unanimously carried, the Southern Division endorsed the action of the Northern Division in passing these resolutions.

A communication was read from the secretary of the Pacific Division of the

A. A. A. S., inviting the Southern Division to a meeting of the Affiliation Committee to be held on February 2, 1934, and requesting the appointment of two members as representatives on the committee. A motion was made by Mr. Willett, seconded by Dr. Miller, and duly carried, that the Northern Division be asked to have its delegates represent the Southern Division at the meeting of the Affiliation Committee.

Attention was called to a communication received from the chairman of the Twentieth American Game Conference, inviting the members of the Cooper Ornithological Club to attend the sessions of the conference to be held in New York on January 22, 23, and 24; to a communication from the secretary of the Special Senate Committee on Conservation of Wild Life Resources, requesting attendance at a conference to be held in Washington, D. C., on January 25; and to a communication from Mrs. Florence Merriam Bailey enclosing two magazine articles and one newspaper clipping relative to the very apparent decrease in numbers of wild waterfowl.

In response to request for field observations, Dr. Bishop reported seeing an adult male Bullock Oriole in his Pasadena yard on January 21; Dr. Miller of seeing at Point Mugu, two years ago, a Little Blue Heron in white plumage, and of again seeing on January 2, this year, a heron in similar plumage with dark blotches on its back. This Dr. Miller designated as the intermediate plumage of the Little Blue Heron. He also spoke of the Black Brant at Point Mugu, and of noticing in early January a flock of 28 which stayed about practically the entire day feeding on the eel grass still to be found there. Mr. Pierce stated that on January 9, in Monrovia, he had seen an Arizona Hooded Oriole, in either female or immature plumage; and that about December 1, near Sells, Arizona, he saw a flock of 14 Black Vultures. Mr. Chambers told of having seen in Arizona, in 1933, Black Vultures all the way from the San Xavier Mission to Sells, but that the birds were scattered individuals rather than in flocks.

Dr. Bishop, chairman of the nominations committee appointed to propose officers for 1934, presented the following names: president, Mr. Clinton G. Abbott; vice-president, Dr. Raymond B. Cowles; secretary, Mrs. Laura B. Law. No other nominations being offered, a motion was

made by Dr. Miller that the secretary be instructed to cast a unanimous ballot electing the above-named to office. The motion was seconded by Mr. Pierce and carried, and the vote cast accordingly.

Dr. Cowles in accepting the office of vice-president stated it would be impossible for him to attend all of the monthly meetings during 1934 and suggested that some one be appointed to represent him. On motion by Dr. Miller, seconded by Mr. Davis, and duly carried, Mr. Willett was appointed to serve as vice-president in the absence of Dr. Cowles.

President Robertson introduced the speaker of the evening, Mr. M. P. Skinner, and briefly sketched the effort that is being made to interest the public in the project to save the herd of Roosevelt Elk now in the Olympic Peninsula. Mr. Skinner in his talk outlined the boundaries of the Olympic Peninsula, located in the extreme northwest corner of the United States; spoke of its magnificent timber, comprising hemlock, fir, spruce, cedar, alder, black maple and white maple; of the tremendous rainfall; of the many rivers, lakes and glaciers; and of the rank growth of underbrush which serves as food for the elk. The range, he said, is particularly fine for the elk. Salmon-berry, huckle-berry, both maples, the alder and the willow all afford good forage. The dense vegetation makes it hard for the hunter to get into the forest, and as there is no grazing by cattle there is no conflict between the elk and the grazing interests. At the present time the herd of Roosevelt Elk in the Olympic Peninsula numbers about 6000, and local sentiment is in favor of preserving the elk there. Mr. Skinner accompanied his talk with an excellent series of colored slides.

An invitation to hold the April meeting of the Southern Division at Pine Creek, Sespe Canyon, on the fourth Sunday in April, was extended by Mr. Sidney B. Peyton. Members were invited to come early and to bring a picnic lunch; coffee to be served on the grounds with the Peytons acting as hosts. Pine Creek is in the Condor country and the invitation was accepted with enthusiasm.

Meeting adjourned.—**LAURA B. LAW,**
Secretary.

FEBRUARY.—The regular monthly meeting of the Southern Division of the Cooper Ornithological Club was held on Tuesday, February 27, 1934, at 8:00 p. m., in the

Los Angeles Museum, Exposition Park, Los Angeles, with 80 members and guests present. In calling the meeting to order President Abbott expressed his appreciation of being elected to occupy the Chair and said it was the first time in the history of the Club that a San Diegan had been so honored. Minutes of the Southern Division for January were read and approved with corrections noted. Minutes of the Northern Division for January were read by title only.

Applications for membership were presented, as follow: Mr. Sayre Macneil, Edison Building, 601 West 5th St., Los Angeles, California, by W. Lee Chambers; Mr. Milton Wetherill, Kayenta, Arizona, by Lyndon L. Hargrave; Mr. Weldon J. Daily, 964 East 5th Ave., Pomona, California, by Harold Michener; Dr. James Jerome Parsons, 345 North Alta Vista, Monrovia, California, by Wright M. Pierce; Mr. Ernest A. Payne, 206 E. California Blvd., Ontario, California, Dr. Lawrence Harvey Walkinshaw, 1421½ W. Michigan Ave., Battle Creek, Michigan, and Mr. Archibald Johnson, Stewart, Nevada, by John McB. Robertson.

The secretary read a letter received from H. P. Sheldon, U. S. Game Conservation Officer, acknowledging receipt of the copy of the report of the Committee on the Present Status of Ducks and Geese which had been sent to the Chief of the Biological Survey. Also, a summary was read of the minutes of the meeting of the Affiliation Committee of the A. A. S. held in San Francisco, February 2, 1934.

Mr. Sidney B. Peyton again invited the Southern Division to Pine Creek, Sespe Canyon, on April 22 (the fourth Sunday in April) for an out-of-door meeting and urged members to come early in order to be more certain of seeing the Condors. On suggestion by President Abbott, the motion was made by Dr. Loye Miller, seconded by Dr. Rich, and duly carried, that Mr. Willett and Mrs. Law be appointed a committee of two to help in arranging needed transportation for the outing. Members going to Pine Creek and having extra available seats in their motor cars were asked to notify the committee.

Mr. J. R. Pemberton spoke with regard to the coming visit in early April of Captain Knight with his trained eagle, and asked if Cooper Club members wished to help him secure an evening's entertainment from Captain Knight. The response

was in the affirmative providing the individual cost was not excessive.

Advance greetings from San Diego were extended by President Abbott to members planning to attend the Ninth Annual Meeting of the Cooper Ornithological Club, and Dr. Miller made another request for response as to probability of attendance, paper to be given, and reservation for dinner, so that necessary details might be completed in connection with the program and entertainment.

The recent deaths of Messrs. Edward J. Brown and J. Hooper Bowles, and of Miss Caroline P. Canby, all members of the Cooper Ornithological Club, were brought to the attention of the meeting, as was also the death of Dr. R. W. Shufeldt. Dr. Miller made the suggestion that those present stand for sixty seconds in honor of these members and friends. This motion of respect was accepted unanimously and in all sincerity.

The program of the evening, "A Trip to Sonora," was presented by Mr. Robert T. Moore and Dr. William H. Burt. Mr. Moore in outlining the trip told of the border difficulties which delayed departure from Nogales for several days, then he described the country through which they traveled enroute to Hermosillo, from there to Guaymas, across the Yaqui River to the Mayo River, and into the mountains. Some colorful and interesting birds encountered were the large macaws, long-tailed jays, three kinds of parrots, motmots, and woodhewers. Wild turkeys were sought but found only by the natives. An interesting reel of motion pictures made during the trip was shown at the conclusion of Mr. Moore's talk.

Dr. Burt then took up the question of what constitutes a so-called faunal area in Sonora or in Lower California. From his point of view all forms of life in the area should be taken into consideration. He mentioned the commendable work of Mr. Frank Stephens, who was the first to subdivide California into life areas and who based these each on about the same amount of temperature, moisture, and soil conditions. Inasmuch as the faunal area work has practically all of it been done on birds, Dr. Burt said that the mammalogists and workers in other fields should not complain, yet they could use the faunal area concept to greater advantage if they knew upon just what it had been based. He then told something of the smaller mammals secured on the trip

to Sonora, in which is the northern limit of a great many species, and of having collected a bat known previously only from Central America.

In the discussion which followed, Mr. Ralph A. Woods spoke of having been a member of two parties that went into Mexico after quail and of his pleasure and enjoyment on both trips. President Abbott reported that at the present time the San Diego Natural History Museum had a small field party in Sonora.

As an additional feature of the evening's program, Mr. Moore gave a short talk covering his ascent of Mt. Chimborazo, in Ecuador, and showed a series of colored slides made from pictures taken while on the climb.

Meeting adjourned. — LAURA B. LAW,
Secretary.

NINTH ANNUAL MEETING

The Ninth Annual Meeting of the Cooper Ornithological Club was called to order by Clinton G. Abbott, president of the Southern Division, at 9:00 a. m., March 30, 1934, in the lecture room of the Natural History Museum, Balboa Park, San Diego. Expressions of good wishes for the success of the meeting were received from John G. Tyler of Fresno, Stanley G. Jewett of Portland, Dr. T. S. Palmer of Washington, D. C. (as secretary of the American Ornithologists' Union), and from Gregory Mathews of Winchester, England.

Vice-president Alden Miller of the Northern Division responded to the cordial welcome extended to the Club by President Abbott. He then announced a brief business session for the purpose of discussing the incorporation of the Club. A resolution of incorporation was offered by Mr. W. Lee Chambers, who stated that Mr. Howard Robertson had prepared the necessary legal papers. Since Mr. Robertson will present elsewhere a technically correct statement of the incorporation proceedings it will only be remarked here that the adoption of the resolution was moved by Dr. Loye Miller, seconded by Mr. J. R. Pemberton and unanimously carried.

The first paper on the program, "Nesting of the Black Swift in Sequoia National Park", was read by title only, as the author, Joseph S. Dixon, was unable to be present. "Notes on the Xantus tradition", by Harry Harris, was presented by W. H.

Burt and proved to be a historical paper of unusual interest. It was illustrated by three slides, the first two portraying the covers of the two rare Hungarian volumes which preserve some of the Xantus letters and records, while the third reproduced a fine photograph of John Xantus himself, secured through the kindness of Dr. Alexander Wetmore. "The present status of the state list" was discussed by Joseph Grinnell. An illustrated paper on "A faunal comparison of the east and west coasts of the northern end of the Gulf of California", by L. M. Huey, closed the morning session.

Lunch at 12:30 o'clock in the Japanese Tea House nearby afforded both nourishment and amusement, even the more staid among those present essaying to imbibe noodles by the oriental method.

The afternoon session opened promptly at 2:00 o'clock with Dr. Loye Miller in the chair. "Habits of male hummingbirds near the nest" was discussed by Mr. Robert T. Moore, with special reference to the Violet-eared Hummingbird of Ecuador. Mr. George M. Wright spoke with optimism on the topic "The primitive persists in bird life of Yellowstone Park." The next paper was by Dr. Loye Miller on "New bird horizons in California." Dr. Miller announced that discoveries in the newly found fields carry the record of the Albatross back to the Miocene.

"The dorsal neck bulge in hummers and the awakening of hummers", by Dr. J. J. Parsons of Monrovia, was a most novel departure and was illustrated with X-Ray lantern slides and motion picture film. That the bulge on the back of a hummingbird's neck could be attributed to a recent indulgence in sugar syrup was startling enough to the secretary, but when Dr. Parsons started computing the amount of food a man would require daily if he had the proportionate appetite of a hummingbird the secretarial pencil was dropped in despair, for no editor living would let such figures pass unchallenged.

Dr. Miller called Mr. C. B. Lastreto to occupy the chair at this time. "Some bird remains from caves in Texas and New Mexico" was the title of a brief talk by Dr. W. H. Burt; and this was followed by "Do birds spread obnoxious pests in citrus trees?", a summation of facts observed by Mr. James B. Dixon during many years of residence in the citrus belt of San Diego County. Briefly, the answer was "not proven". To have Mr. and Mrs.

Vernon Bailey in attendance at our annual meeting was a great pleasure, and Mr. Bailey's demonstration of "Painless pole traps for taking hawks and owls and other large birds for banding" attracted much interest. The afternoon session closed with Mr. Robert T. Moore's interesting description of "The Mt. Sangay area of Ecuador and its fauna".

On Friday evening the Annual Meeting of the Board of Governors of the Cooper Club was held in the hospitable home of J. W. Sefton, Jr., President of the San Diego Society of Natural History, while Mrs. Clinton G. Abbott charmingly entertained the governors' ladies at dinner in her lovely home overlooking Mission Canyon.

On Saturday morning, March 31, President Abbott called the meeting to order at 9:30 o'clock. A paper upon "Characters differentiating certain species of *Stercorarius*", prepared by George Willett and Hildegard Howard, was read by the former. Dr. Miller congratulated the authors on the abundance of material which they had at hand for comparison, stating that when he began his studies of avian osteology some years ago his initial supply of materials for comparison consisted of the skeletons of one rooster, one sea gull and one ostrich! Mr. Abbott called Mr. Willett to the chair at this time and A. J. van Rossem read a paper upon "Some European types of American birds", of interest to members concerned with the intricacies of nomenclature. Mr. Roland C. Ross being absent, his paper on "The whisper songs of some birds" was read by title; and then Mr. James Moffitt of the California Division of Fish and Game discussed "State scientific collecting permits", a topic which awakened so much interest that the Chair appointed a committee composed of Dr. Bishop, Mr. Huey, Mr. van Rossem, Mr. Grinnell, Mr. James Dixon and Mr. George Wright to confer with Mr. Moffitt and make recommendations.

Sighs of relief were heard from several members when Mr. J. R. Pemberton was asked to take the chair and necessarily had to relinquish the movie camera with which he had been stalking various individuals. "Studies of the Prairie Falcon", a motion picture film by Wright M. Pierce, was much appreciated. "Problems of speciation in juncos", by Alden H. Miller, aroused interesting discussion. John McB. Robertson spoke upon "The

Condor exchange list" and explained the value to the Club of the exchange system. At this time the meeting was adjourned and lunch was served at Vincent's Dining Room, 2720 Fourth Avenue, San Diego.

At 2:10 p. m. the meeting re-convened and Mr. Michener presented "Mockingbirds—their territories and individualities", compiled by Harold and Josephine Michener from records kept of banded individuals watched throughout the year at the Michener home in Pasadena—a most valuable contribution. Mr. Lewis W. Walker gave an illustrated talk upon "The food of Barn Owls", of much educational value. The program closed with an instructive film on "Duck disease", prepared by the U. S. Biological Survey and presented by Mr. George Tonkin of the staff.

A check of the record of attendance kept by Mr. Frank Gander of the Museum showed that 106 names were registered, 65 being those of Cooper Club members.

Visitors from a distance found it pleasant to greet again, as at the Annual Meeting of the Club held in San Diego seven years ago, Mr. Frank Stephens, a member of the Club since 1894, and Mr. A. M. Ingersoll, whose membership dates from 1895. Other senior members present were Mr. A. W. Anthony and Mr. C. P. Streater.

The latter part of Saturday afternoon was devoted to a tour of the San Diego Zoo under the guidance of Mrs. Belle J. Benchley, Executive Secretary of the Zoological Society of San Diego. Very many rare birds and mammals were seen, greatest interest centering about the penguin pool and the cage inhabited by two thriving young gorillas.

The annual dinner was held informally at 6:30 o'clock on Saturday evening at the University Club, 1333 Seventh Avenue, with about seventy in attendance. Dr. Loye Miller, President of the Board of Governors, presided according to precedent and in his genial way of making the evening a very happy one was ably assisted by his Vice-president, Mr. George M. Wright. Farewells were said at nine o'clock and the Ninth Annual Meeting of the Cooper Ornithological Club ended for all members save the fortunate few who under the leadership of Mr. L. M. Huey spent Easter Sunday, April 1, visiting Los Coronados Islands. It is rumored that Mr. A. O. Treganza was the lucky finder of a set of Easter eggs (Duck Hawk) on North Island.

Adjourned.—HILDA W. GRINNELL, *Secretary Northern Division.*

GOVERNORS' MEETING

The Thirteenth Annual Meeting of the Board of Governors of the Cooper Ornithological Club was held at San Diego March 30, 1934. The Board was entertained at dinner by Mr. J. W. Sefton, Jr., President of the San Diego Society of Natural History, at his residence on Point Loma Avenue. President L. H. Miller was in the chair, and, in the absence of the Secretary, T. I. Storer, George Willett acted in that capacity. The following were present: Clinton G. Abbott, Louis B. Bishop, W. Lee Chambers, Mrs. Hilda W. Grinnell, Joseph Grinnell, C. B. Lastreto, Mrs. Laura B. Law, Harold Michener, A. H. Miller, L. H. Miller, J. R. Pemberton, W. M. Pierce, Howard Robertson, John McB. Robertson, George Willett, and George M. Wright. The following proxies were at hand: Mrs. Amelia S. Allen, Frank N. Bassett, Herbert L. Coggin, Harry Harris, and John G. Tyler held by W. Lee Chambers; R. B. Cowles and Joseph S. Dixon by L. H. Miller; W. K. Fisher and Jean M. Linsdale by J. Grinnell, and J. S. Appleton, J. S. Cooper, Joseph Mailliard, Wilfred H. Osgood, Gayle B. Pickwell, and Guy C. Rich by George Willett. J. W. Sefton, Jr., was present by invitation.

Minutes of the Twelfth Annual Meeting were read and approved. A report of the Auditing Committee that the Business Managers' accounts for 1933 had been examined and found correct was read and accepted. The report of the Editors was submitted by Joseph Grinnell. The Condor from May, 1933, to March, 1934, was practically the same size as for the preceding year, 272 pages, though the cost of printing had advanced from \$6.00 to \$6.60 per page. The new (1934) volume opened with a colored plate of hummingbirds furnished by Robert T. Moore. In handling the engraving of this plate Harry Harris rendered important service. The continuation of the policy of publishing portraits of members of the Club was approved by vote of the Board. The Editor made special mention of papers published during the year, by E. L. Sumner, Jr., on Black-crowned Night Herons, George M. Wright, on men and birds in National Parks, and H. and J. R. Michener's study on ages of House Finches; also (in Field and Study) J. B. Dixon's "Records of the nesting of certain birds in eastern California", T. T. McCabe's "The owl peril on the Berkeley campus", and H. S. Swarth's "Relationships of Coues and

Olive-sided flycatchers." During the past year the cutting down of other journals has, among other factors, resulted in an increased number of papers being offered us for publication. The Editors' report was ordered accepted and filed.

The Business Managers' report was submitted by J. McB. Robertson and forms appendix A of these minutes. The year 1933 started with a balance in the General Fund of \$2,429.00 and ended with a balance of \$1,553.93. This reduction is largely because of the cost of Avifauna No. 21 (\$890.37) coming so late in the year, as the total income for 1933 was only about \$30.00 less than that for 1932. The bonds in the Endowment Fund now total \$11,200.00 par value and have earned \$475.93 interest during 1933. The net loss of members and subscribers during the year was thirty-nine. Since January 1, 1934, there has been a noticeable increase in rate of proposal of new members. The Business Managers' report was accepted and ordered filed.

A report of the committee on incorporation was made by Howard Robertson. This report was accepted and the committee discharged.

In response to written invitation from Secretary Jourdain, A. H. Miller and T. I. Storer were appointed to represent the Club at the Eighth International Ornithological Congress, to be held at Oxford, England, July 2 to 7, 1934.

A recommendation to the Secretary of Agriculture that Stewart Edward White be appointed a member of the President's three-man committee on Wild Life Restoration was approved. A recommendation to the Governor of California that J. R. Pemberton and George Willett be appointed members of the Game Refuge and Public Shooting Grounds Advisory Committee was also approved.

A resolution of appreciation of courtesies extended by J. W. Sefton, Jr., and other San Diego ornithologists and friends was voted. The San Francisco Bay Region was designated as the meeting place for the 1935 Annual Meeting of the Club.

Election of officers for the coming year resulted as follows: President, Loye H. Miller; Vice-president, George M. Wright; Secretary, George Willett; Editor, Joseph Grinnell; Associate Editors, J. M. Linsdale and A. H. Miller; Business Managers, W. Lee Chambers and John McB. Robertson. Adjourned.—GEORGE WILLETT, Secretary.

OFFICERS AND MEMBERS OF THE COOPER ORNITHOLOGICAL CLUB

Revised to April 15, 1934

OFFICERS

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Loye H. Miller, President
George M. Wright, Vice-President
George Willett, Secretary

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Jean M. Linsdale, Associate Editor
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NORTHERN DIVISION

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Hilda Wood Grinnell, Secretary

SOUTHERN DIVISION

Clinton G. Abbott, President
Raymond B. Cowles, Vice-President
Laura B. Law, Secretary

MEMBERSHIP DIRECTORY

Year following address indicates date of election to membership. Year in parentheses indicates date of advancement to Honorary or Life Membership. [L.] = Life Member.

A

Abbott, Clinton G., Nat. Hist. Museum,
Balboa Park, San Diego, Calif. 1921.
Abbott, Jacob Bates, 1575 Homewood
Drive, Altadena, Calif. 1930.

- Adams, Benjamin, Weathersfield, Conn. 1920.
- Albro, Miss Mary Stephanie, 51 Canyon Road, Berkeley, Calif. 1927.
- Alexander, Miss Annie M., The Regillus, 19th and Jackson Sts., Oakland, Calif. 1908 (1923) [L.]
- Allen, Mrs. Amelia S., 37 Mosswood Road, Berkeley, Calif. 1913.
- Allen, Dr. Arthur A., McGraw Hall, Ithaca, N. Y. 1911.
- Allen, Walter I., 2057 Pepper Drive, Altadena, Calif. 1922.
- Anderson, A. H., Rt. 2, Box 105C, Tucson, Ariz. 1932.
- Anderson, Edwin C., Dell Rapids, South Dakota. 1925.
- Anderson, Harvey T., Jr., 3062 Weldon Ave., Los Angeles, Calif. 1931.
- Anderson, Patricia, 2325 Piedmont Ave., Berkeley, Calif. 1934.
- Anderson, Dr. Rudolph M., Biol. Div. National Museum of Canada, Ottawa, Ontario, Canada. 1916.
- Andrews, Arthur Allen, 362 Augustine St., Rochester, N. Y. 1927.
- Anthony, A. W., Chesterfield Court, 3311½ 30th St., San Diego, Calif. 1921 (1932). [Honorary].
- Applegate, Elmer I., Dudley Herbarium, Stanford University, Calif. 1921.
- Appleton, J. S., 1332 N. Citrus Ave., Hollywood, Calif. 1901 (1919). [L.]
- Arnold, John R., 281 Madison St., Coalinga, Calif. 1930.
- Arnold, Leroy W., 3424 Richmond Ave., San Diego, Calif. 1929.
- Arnold, Dr. Ralph, 812 Subway Terminal Bldg., Los Angeles, Calif. 1901.
- Ashcroft, Granville Plumber, Yosemite National Park, Calif. 1927.
- Ashley, James L., 1166 Spruce St., Berkeley, Calif. 1933.
- Atkinson, Dr. Spencer R., 90 N. Madison Ave., Pasadena, Calif. 1925.
- Atkinson, W. L., 1735 The Alameda, San Jose, Calif. 1901.
- Atsatt, Miss Sarah R., 345 S. Serrano Ave., Los Angeles, Calif. 1911.
- Atwell, George Dudley, 2806 Summer St., Eureka, Calif. 1926.
- Austin, Oliver L., M. D., Tuckahoe, Westchester Co., N. Y. 1930.
- Austin, Oliver L., Jr., North Eastham, Mass. 1933.
- Austin, Paul G., Rt. 1, Box 28A, Pasadena, Calif. 1934.
- Averill, Charles Ketchum, 2963 Nichols Ave., Bridgeport, Conn. 1922.
- Avis, Walter M., 129 S. Thomas St., Pomona, Calif. 1929.
- Axelrod, Daniel, 3039 Seminary Ave., Oakland, Calif. 1930.
- Ayer, Mrs. N. Edward, 1300 Hillcrest Drive, Pomona, Calif. 1929.

B

- Badè, Dr. Wm. F., 2616 College Ave., Berkeley, Calif. 1903.
- Badger, M. C., Santa Paula, Calif. 1915.
- Bailey, Alfred M., Chicago Academy Sciences, Lincoln Park, Chicago, Ill. 1917.
- Bailey, Bernard, San Marcos, Calif. 1911.
- Bailey, Florence M. (Mrs. Vernon), Rt. 2, Box 472, San Marcos, Calif. 1910 (1920) [L.] (1920) [Honorary].
- Bailey, H. H., 820 Alhambra Circle, Coral Gables, Florida. 1903.
- Bailey, Vernon, Rt. 2, Box 472, San Marcos, Calif. 1904.
- Baker, Jack D., 435 First St., Santa Rosa, Calif. 1930.
- Baker, John H., 1165 Fifth Ave., New York, N. Y. 1930.
- Baker, W. D., Science Dept., John Muir Junior High School, Burbank, Calif. 1933.
- Baldwin, Miss Alice, 135 S. 17th St., San Jose, Calif. 1934.
- Baldwin, S. Prentiss, 11025 East Blvd., Cleveland, Ohio. 1920 (1920). [L.]
- Bales, Dr. B. R., 149 W. Main St., Circleville, Ohio. 1906.
- Ball, Wm. Howard, 1861 Ingleside Terrace, Washington, D. C. 1926.
- Ballard, Albert, 2101 Browning, Berkeley, Calif. 1929.
- Bamford, Mrs. G. L., 1428 Castro St., Oakland, Calif. 1918.
- Bancroft, Griffing, 2525 First St., San Diego, Calif. 1920.
- Barker, Fred, Parkers Prairie, Minn. 1914.
- Barnes, Claude T., 359 10th Ave., Salt Lake City, Utah. 1915.
- Barnes, R. Magoon, Lacon, Ill. 1908 (1921). [L.]
- Bartram, John, R.R. 2, West Chester, Penn. 1926.
- Basner, Harry, 33 West 26th St., New York, N. Y. 1930.
- Bassett, Frank N., 91 Merced Ave., San Francisco, Calif. 1919.
- Batchelder, Chas. F., 7 Kirkland St., Cambridge, Mass. 1910.
- Bates, Miss Josephine J., 78 S. Parkwood Blvd., Pasadena, Calif. 1921.

- Battles, Carroll David, 2347 S. Highland Ave., Los Angeles, Calif. 1924.
- Baynard, Oscar E., Box 104, Plant City, Florida. 1924.
- Beadel, Henry Ludlow, R.F.D. A, Tallahassee, Florida. 1927.
- Beck, Rollo H., Planada, Merced Co., Calif. 1894 (1919). [L.]
- Bebb, William, 431 E. Washington, Oakland City, Indiana. 1934.
- Beebe, William, 33 West 67th St., New York, N. Y. 1926.
- Behle, William Harroun, Museum Vertebrate Zoology, Berkeley, Calif. 1933.
- Bennet, Miss Eleanor V. V., 785 Estudillo Ave., San Leandro, Calif. 1920.
- Bennett, Walter W., Arnolds Park, Iowa. 1934.
- Benson, George, Princeton, Oregon. 1926.
- Benson, Ryland Edward, 507 Palm St., Whittier, Calif. 1932.
- Benson, Dr. Seth Bertram, Museum Vertebrate Zoology, Berkeley, Calif. 1927.
- Pent, A. C., 140 High St., Taunton, Mass. 1909 (1922) [L.] (1933) [Honorary].
- Bergtold, Dr. W. H., 1159 Race St., Denver, Colo. 1917.
- Betterley, Bertram O., 2005 2nd St., Eureka, Calif. 1922.
- Bickford, E. L., 1303 Jefferson St., Napa, Calif. 1927.
- Bicknell, Mrs. F. T., 319 S. Normandie Ave., Los Angeles, Calif. 1913.
- Bigelow, Homer L., 2909 Gulf Ave., Pass-a-Grille Beach, Florida. 1910.
- Birkhead, Robert H., 1115 Kilson Drive, Santa Ana, Calif. 1928.
- Bishop, Dr. Louis B., 450 Bradford St., Pasadena, Calif. 1904 (1920). [L.]
- Blackwelder, Miss Martha Jean, Box NN, Stanford University, Calif. 1925.
- Plain, Dr. Alexander W., 2201 Jefferson Ave., Detroit, Mich. 1926.
- Blake, Mrs. Edwin T., Arlington Ave. and Rincon Road, Berkeley, Calif. 1917.
- Blanchard, Miss Barbara D., Apt. 215, 214 Haight St., San Francisco, Calif. 1930.
- Blanks, Herbert Beverly, 845 Contra Costa Ave., Berkeley, Calif. 1933.
- Blayney, Miss Nita A., 920 O St., Fresno, Calif. 1911.
- Blittersderfer, Clark, 866 Grant St., Denver, Colorado. 1922.
- Bliss, John D., Pozo, San Luis Obispo Co., Calif. 1916.
- Bolander, L. Ph., 2517 21st Ave., Oakland, Calif. 1907.
- Bolt, Benj. F., 5300 Brookside Blvd., Kansas City, Mo. 1916.
- Book, Miss Lois Adelaide, 733 Franklin Ave., Columbus, Indiana. 1930.
- Borchert, Mrs. Georgia B., 635 Homer Ave., Palo Alto, Calif. 1934.
- Borden, Knox, 1669 W. Acacia Ave., Stockton, Calif. 1934.
- Borell, Adrey E., National Park Service, Yosemite, Calif. 1918.
- Bowdish, B. S., Demarest, N. J. 1910.
- Bowen, Miss Lydia Spencer, 841 Earlham St., Pasadena, Calif. 1930.
- Boyers, L. Morgan, 1014 Mariposa St., Berkeley, Calif. 1931.
- Boyle, Ashby D., 1001 E. So. Temple St., Salt Lake City, Utah. 1915.
- Bracelin, Mrs. H. P., 2214 Vine St., Berkeley, Calif. 1930.
- Braly, J. C., De Poe Bay, Ore. 1926.
- Brand, Albert R., 47 Park Ave., White Plains, N. Y. 1933.
- Brandreth, Courtenay, Ossining, New York. 1925.
- Brandt, H. W., 11945 Carleton Road, Cleveland, Ohio. 1914.
- Bretsch, Clarence, 6201 E. 4th Ave., Gary, Indiana. 1926.
- Brode, J. Stanley, 215 N. Blaine St., Pendleton, Oregon. 1934.
- Brooks, Major Allan, Okanagan Landing, B. C., Canada. 1906 (1920). [L.]
- Brooks, Prof. Sumner C., Dept. Zool., Univ. Calif., Berkeley, Calif. 1928.
- Brooks, Winthrop Sprague, 234 Berkeley St., Boston, Mass. 1923.
- Broomhall, W. H., Stockport, Ohio. 1927.
- Brown, D. E., Rt. 2, Bothell, Wash. 1909.
- Brown, Mrs. Herbert, 434 E. 2nd St., Tucson, Ariz. 1914.
- Brown, Miss Nellie May, 10361 Fernglan Ave., Tujunga, Calif. 1922.
- Brown, Mrs. Scott, 880 La Loma Road, Pasadena, Calif. 1934.
- Bruun, Charles A., 1510 Central Ave., Hot Springs, Arkansas. 1925.
- Bryan, Wm. A., Los Angeles Museum, Exposition Park, Los Angeles, Calif. 1921.
- Bryant, Chas. A., 150 Franklin St., San Francisco, Calif. 1922.
- Bryant, Dr. Harold C., National Park Service, Washington, D. C. 1910 (1920). [L.]
- Bryant, Lincoln, Jr., 149 Randolph Ave., Milton, Mass.
- Bryens, Oscar McKinley, McMillan, Luce Co., Mich. 1927.
- Buckman, George, 47 Bonnie Lane, Berkeley, Calif. 1927.
- Buhn, Mrs. Minnie, 3027 60th Ave., Oakland, Calif. 1921.

- Bunker, Paul F., 717 Spruce St., Berkeley, Calif. 1922.
- Burk, Miss Genevieve S., Tabard Inn, 1739 N St., NW, Washington, D. C. 1925.
- Burleigh, Thomas D., 223 Federal Bldg., Ashville, N. C. 1918.
- Burnett, W. L., State Agricultural College, Fort Collins, Colo. 1910.
- Burnham, Dr. Clark, 2287 Telegraph Ave., Berkeley, Calif. 1907.
- Burns, Frank L., Berwyn, Penn. 1909.
- Burt, Dr. William Henry, Calif. Institute Technology, Pasadena, Calif. 1928.
- Burtch, Verdi, Branchport, N. Y. 1910.
- Butzbach, Arthur G., P. O. Box 62, Lower Lake, Calif. 1933.
- C
- Cain, Brighton C., P. O. Box 796, Oakland, Calif. 1925.
- Calder, James A., Buena Park, Calif. 1917.
- Calder, Mrs. James A., Buena Park, Calif. 1926.
- Camp, Dr. Chas. L., Mus. Paleontology, Univ. Calif., Berkeley, Calif. 1909.
- Campbell, Berry, Johns Hopkins Medical School, Baltimore, Md. 1930.
- Campbell, Catherine C., 627 Drexel Place, Pasadena, Calif. 1934.
- Campbell, Robert A., M.D., 764 S. Hobart Blvd., Los Angeles, Calif. 1932.
- Cantwell, George G., 3602 Keystone Ave., Palms, Calif. 1915.
- Carlton, Blondel H., Physiology Dept., Medical School, Univ. of Rochester, Rochester, N. Y. 1931.
- Carpenter, Mrs. Fred A., 2246 McGee Ave., Berkeley, Calif. 1930.
- Carpenter, Nelson K., 5014 Westminster Terrace, San Diego, Calif. 1901.
- Carriger, Henry W., 5185 Trask St., Oakland, Calif. 1895.
- Carroll, James J., P. O. Box 356, Houston, Texas. 1926 (1929). [L.]
- Carson, Carl L., Arlington Ave., and Rincon Road, Berkeley, Calif. 1927.
- Carter, Miss Frances, 1626 LeRoy Ave., Berkeley, Calif. 1934.
- Cartwright, Bertram William, 238 Guildford St., Deer Lodge, Winnipeg, Manitoba, Canada. 1930.
- Chambers, W. Lee, 2068 Escarpa Drive, Eagle Rock, Calif. 1897 (1919). [L.]
- Chaney, Dr. Ralph W., 1129 Keith Ave., Berkeley, Calif. 1923.
- Chapman, Dr. Frank M., Amer. Museum Nat. Hist., New York, N. Y. 1903.
- Chattin, Miss Susan E., Museum Vert. Zool., Univ. Calif., Berkeley, Calif. 1927.
- Cheney, E. S., 1825 Fifth Ave., Oakland, Calif. 1920.
- Cheney, Miss Mary, 48 Hartford Road, South Manchester, Conn. 1919.
- Christy, Bayard H., 403 Frederick Ave., Sewickley, Penn. 1928.
- Clabaugh, Ernest Dwight, 44 Lenox Road, Berkeley, Calif. 1923.
- Clark, Prof. Harold W., Angwin, Napa County, Calif. 1925.
- Clary, Mrs. Ben Little, Coral Reef Ranch, Coachella, Calif. 1929.
- Clay, C. Irvin, Box 353, Eureka, Calif. 1910.
- Cockefair, Miss Ellen A., 4021 Howe St., Oakland, Calif. 1925.
- Coe, John Edwin, 4015 N. Ashland Ave., Chicago, Ill. 1929.
- Coffin, Mrs. Percival B., 5708 Kenwood Ave., Chicago, Ill. 1926.
- Coggins, Herbert L., 2929 Piedmont Ave., Berkeley, Calif. 1910.
- Cohen, Donald A., R. 1, Box 404, Hayward, Calif. 1901.
- Colburn, A. E., 716 S. Flower St., Los Angeles, Calif. 1905 (1915). [L.]
- Cole, Mrs. Arthur H., 2524 Benvenue Ave., Berkeley, Calif. 1917.
- Cole, Elliot, 1180 Banyan St., Pasadena, Calif. 1929.
- Cole, F. R., U. S. Entomological Laboratory, 724 Earlham Drive, Whittier, Calif. 1920.
- Compton, Lawrence V., Museum Vertebrate Zoology, Berkeley, Calif. 1927.
- Conover, H. B., 6 Scott St., Chicago, Ill. 1924 (1924). [L.]
- Cook, Frederick W., 1604 E. Harrison St., Seattle, Wash. 1919.
- Cook, Miss Inez, P. O. Box 203, Glendora, Calif. 1924.
- Cooke, Miss May T., 2572 University Place, Washington, D. C. 1918.
- Cookman, Alfred, 601 N. Kenwood St., Glendale, Calif. 1912.
- Cooper, James S., 310 Howard Ave., Piedmont, Calif. 1903.
- Cottam, Clarence, U. S. Biological Survey, Washington, D. C. 1926.
- Coursen, G. Blair, 761 East 69th Place, Chicago, Ill. 1929.
- Cowles, Dr. Raymond B., Univ. Calif. at Los Angeles, Los Angeles, Calif. 1928.
- Cozens, Harold H., 5231 Golden Gate Ave., Oakland, Calif. 1921.
- Crockett, Harry L., 90 Columbus Ave., Phoenix, Ariz. 1924.
- Crouch, James E., San Diego State College, San Diego, Calif. 1934.
- Culver, George B., Room 170, Admin. Bldg., Stanford University, Calif. 1921.

Culver, Miss Susan B., 1600 Fernwood Drive, Oakland, Calif. 1914.
Cumming, R. A., 610 E. 64th Ave., Vancouver, B. C., Canada. 1931.
Currier, Ed. S., 8541 N. Chicago Ave., St. Johns Sta., Portland, Ore. 1904.
Curtis, Miss Elizabeth L., 5648 Beach Drive, Seattle, Wash. 1933.
Cushing, John Eldridge, Jr., 2525 Webster St., San Francisco, Calif. 1934.
Cushman, Lester H., So. Calif. Jr. College, Arlington, Calif. 1934.

D

Daily, Weldon J., 964 E. 5th Ave., Pomona, Calif. 1934.
Danby, Durward E., R. 3, Box 502, Santa Cruz, Calif. 1927.
Danforth, Stuart Taylor, College of Agriculture, Box 541, Mayaguez, Porto Rico. 1925.
Davenport, Mrs. Elizabeth B., 46 Western Ave., Brattleboro, Vermont. 1911.
Davidson, Mrs. M. E. McLellan, Calif. Academy Sciences, San Francisco, Calif. 1919.
Davis, Dr. Frederick B., 2810 Woolsey St., Berkeley, Calif. 1916.
Davis, Howard P., 2608 W. Ramona Blvd., Alhambra, Calif. 1932.
Davis, James Randall, 1915 Marin Ave., Berkeley, Calif. 1931.
Davis, John M., 227 Clark St., Eureka, Calif. 1908.
Davis, Wm. B., Museum Vertebrate Zoology, Univ. Calif., Berkeley, Calif. 1930.
Day, Ezra R., 3789 S. 52nd West St., Salt Lake City, Utah. 1932.
Dearborn, Dr. Ned, Hilton Village, Virginia. 1909.
Decker, F. R., Kiona, Wash. 1913.
DeGroot, Dudley S., 450 S. 16th Ave., San Jose, Calif. 1916.
Delacour, Jean, Chateau de Cleres, Seine Inferieure, France. 1927.
De Lury, Ralph E., Dominion Observatory, Ottawa, Ontario, Canada. 1926.
Denny, Judge Thomas C., Sonoma, Calif. 1924.
Dexter, B. D., 2519 Ashby Ave., Berkeley, Calif. 1928.
Dickey, Mrs. Florence V. V., 514 Rosemont Ave., Pasadena, Calif. 1923.
Dille, F. M., P. O. Pox 428, Rapid City, South Dakota. 1903.
Dixon, James B., Rt. 1, Box 688, Escondido, Calif. 1924.
Dixon, Joseph S., 1735 Allston Way, Berkeley, Calif. 1904.

Dodge, Miss Laura I., 3031 E. 3rd St., Long Beach, Calif. 1915.
Dodson, Mrs. Leigh M., 3411 W. 15th St., Los Angeles, Calif. 1929.
Doolittle, E. A., Box 44, Painesville, Ohio. 1918.
Dresbach, Elsa, 1238 Cowper St., Palo Alto, Calif. 1934.
DuBois, Alexander Dawes, R. 2, Christmas Lake Road, Excelsior, Minn. 1911.
DuBois, H. M., 4323 S. E. Alder St., Portland, Ore. 1931.
DuMont, Philip A., 306 51st St., Des Moines, Iowa. 1932.
Duncan, David, III, 75 Spencer Ave., Sausalito, Calif. 1933.
Dunlavy, Joseph C., 177 S. Commonwealth Ave., Los Angeles, Calif. 1933.
Dyer, Ernest I., 40 Selborne Drive, Piedmont, Calif. 1931.

E

Easton, Mrs. Jane F., 1525 Torrey Road, La Jolla, Calif. 1920.
Edge, Mrs. Charles Noel, 136 E. 67th St., Sta. Y, New York, N. Y. 1932.
Edge, Chester W., R. 3, Box 21, Healdsburg, Calif. 1930.
Edge, Elton R., San Bernardino Valley Junior College, San Bernardino, Calif. 1932.
Edson, J. M., 90 Marine Drive, Bellingham, Wash. 1911.
Edwards, Myrtle S. (Mrs. Harlan), 225 E. 11th St., Claremont, Calif. 1924.
Eggleston, J. W., Cuttingsville, Vermont. 1913 (1919). [L.]
Ehinger, Dr. C. E., 730 Grand Ave., Keokuk, Iowa. 1929.
Ehmann, E. W., 37 Bellevue Ave., Piedmont, Calif. 1931.
Einarsson, Anna R. (Mrs. S.), 699 Santa Barbara Road, Berkeley, Calif. 1934.
Eisenman, Roland G., Box 76, Monolith, Calif. 1927.
Elder, Andrew G., Rt. 1, Bothell, Washington. 1933.
Ellis, Mrs. Ella Haines, 910 Grattan St., Los Angeles, Calif. 1922.
Ellis, Ralph, 2421 Ridge Road, Berkeley, Calif. 1923 (1926). [L.]
Emerson, W. Otto, Palm Cottage, Hayward, Calif. 1901 (1921). [L.]
Emilio, S. Gilbert, 7 Winter St., Salem, Mass. 1926.
Emlen, John T., Jr., 36 W. School Lane, Germantown, Phila., Penn. 1930.
Erickson, Frank M., R. D. No. 3, Box 65, Salem, Oregon. 1931.

- Erickson, Mary M., Museum Vertebrate Zoology, Univ. Calif., Berkeley, Calif. 1930.
 Errington, Paul Lester, Insectary, Iowa State College, Ames, Iowa. 1932.
 Evins, Samuel Nesbitt, 188 14th St., N.E., Atlanta, Ga. 1929.

F

- Faddis, Miriam S., 1942 Le Moyne St., Los Angeles, Calif. 1931.
 Failing, Robert, 518 66th St., Oakland, Calif. 1933.
 Fargo, William G., 506 Union St., Jackson, Mich. 1928.
 Farley, F. L., Camrose, Alberta, Canada. 1923.
 Ferguson, Mrs. Aurelia B., 999 Gramercy Drive, Los Angeles, Calif. 1922 (1922). [L.]
 Ferris, Reed W., Beaver, Oregon. 1931.
 Field, Clyde L., 2534 K Ave., National City, Calif. 1919.
 Figgins, J. D., Colo. Museum Nat. Hist., Denver, Colo. 1925.
 Fink, George W., Crows Landing, Calif. 1929.
 Finley, William L., R. F. D. No. 10, Box 426A, Portland, Oregon. 1900.
 Fisher, Dr. A. K., Room 77, U. S. National Museum, Washington, D. C., 1904 (1924) [Honorary].
 Fisher, Miss Edna M., 2410 Fulton St., Berkeley, Calif. 1923.
 Fisher, Miss Elizabeth W., 2222 Spruce St., Philadelphia, Penn. 1910.
 Fisher, Prof. Walter K., Hopkins Marine Sta., Pacific Grove, Calif. 1900.
 Fitch, Henry Sheldon, Museum Vertebrate Zoology, Berkeley, Calif. 1933.
 Fleming, J. H., 267 Rusholme Road, Toronto 4, Ontario, Canada. 1910.
 Fletcher, Mrs. Howard F., 1172 Laurel St., Berkeley, Calif. 1932.
 Flynn, Miss Helen, 1094 Keith Ave., Berkeley, Calif. 1920.
 Follett, W. L., 3621 Broadway, Oakland, Calif. 1926.
 Forrest, Earle R., 205 N. Main St., Washington, Penn. 1910.
 Fortiner, John C., Box 526, Vista, Calif. 1910.
 Fowler, Frederick H., 221 Kingsley Ave., Palo Alto, Calif. 1901.
 Frames, Mrs. Donald C., 1730 Middlefield Road, Palo Alto, Calif. 1934.
 Frazer, J. Thomas, Jr., 821 Summer St., Eureka, Calif. 1921.
 Frazier, J. F., 724 Proctor Place, Independence, Mo. 1930.
 French, Mrs. A. J., Carlton, Oregon. 1921.
 French, Miss Mena Vestal, Box 171, Wayland, Mass. 1929.
 Frick, G. A., 5922 Tipton Way, Los Angeles, Calif. 1929.
 Friedmann, Dr. Herbert, Div. of Birds, U. S. National Museum, Washington, D. C. 1927.
 Frederick, George W., 3029 Belmont Ave., Chicago, Ill. 1926.
 Frost, Wilfrid T., 937 Spruce St., Berkeley, Calif. 1931.
 Fry, Walter, Three Rivers, Calif. 1934.

G

- Gabrielson, Ira N., Room 404, New U. S. Court House, Portland, Ore. 1919.
 Gallup, Frederick Norman, Escondido, Calif. 1921.
 Gander, Frank Forrest, Natural History Museum, Balboa Park, San Diego, Calif. 1927.
 Garber, Miss Lida J., 15 Tanglewood Road, Berkeley, Calif. 1923.
 Gardiner, A. W., 1010 Standard Trust Bldg., Cleveland, Ohio. 1931.
 Gardner, Dr. Leon L., Fort Lawton, Wash. 1911-1916, 1926.
 Gault, Benj. T., 570 Anthony St., Glen Ellyn, Ill. 1905.
 Gausbeck, A. T., 50 Broadway, New York, N. Y. 1924.
 Gay, Harold S., 200 S. Wilson Ave., Alhambra, Calif. 1901.
 Geiselhart, Miss Josephine, Concord, Calif. 1920.
 Giannini, Charles A., Poland, N. Y. 1919.
 Giddings, Levi A., 772 Yale Ave., Salt Lake City, Utah. 1923.
 Gifford, Dr. Harold, 243 Charles St., Boston, Mass. 1916.
 Gignoux, Claude, 2608 Octavia St., San Francisco, Calif. 1919.
 Gilbert, Robert Keech, 101 N. Arden Blvd., Los Angeles, Calif. 1929.
 Gillespie, Richard, Bay City Business College, Bay City, Mich. 1933.
 Gilman, M. French, Death Valley, Calif. 1901.
 Gilmore, Raymond M., Museum Vertebrate Zoology, Berkeley, Calif. 1926.
 Glassell, Steve A., 9533 Santa Monica Blvd., Beverly Hills, Calif. 1929.
 Goelitz, Walter A., 240-22 Little Neck Road, Douglaston, Long Island, N. Y. 1915 (1920). [L.]
 Goldman, Edward A., Biological Survey, Washington, D. C. 1901.
 Gordon, Kenneth L., Dept. Zool., State Agricultural College, Corvallis, Oregon. 1927.
 Grasett, Frank G., 535 Green Bay Road, Glencoe, Ill. 1926.

- Green, Mrs. George L., 455 William St., Palo Alto, Calif. 1934.
- Gregory, Stephen S., Jr., Box N, Winnetka, Ill. 1924.
- Grimes, Samuel A., 4661 Attleboro St., Jacksonville, Florida. 1924.
- Grinnell, Dr. George Bird, 238 E. 15th St., New York, N. Y. 1914.
- Grinnell, Hilda Wood (Mrs. Joseph), 3016 Benvenue Ave., Berkeley, Calif. 1912 (1921). [L.]
- Grinnell, Prof. Joseph, Museum Vert. Zoology, Univ. Calif., Berkeley, Calif. 1894 (1919). [L.]
- Grinnell, Willard Fordyce, 3016 Benvenue Ave., Berkeley, Calif. 1921.
- Griscom, Ludlow, Museum of Comparative Zoology, Cambridge, Mass. 1933.
- Gross, Prof. Alfred O., 11 Boody St., Brunswick, Maine. 1923.
- Guion, George Seth, 1716 American Bank Bldg., New Orleans, La. 1911.
- Gunn, Miss Amy E., 2760 Green St., San Francisco, Calif. 1914.
- H**
- Hachisuka, Masauji, Mita, Shiba, Tokio, Japan. 1928.
- Hackley, Mrs. Sadie Gilmore, 807 Waverly St., Palo Alto, Calif. 1934.
- Haefner, Miss Emma, 2535 Regent St., Berkeley, Calif. 1931.
- Hager, Miss Elizabeth, 2322 Observatory Ave., Los Angeles, Calif. 1931.
- Hague, Miss Florence S., Dept. Biol., Sweet Briar College, Sweet Briar, Virginia. 1925.
- Hales, Prof. B. J., Normal School, Brandon, Manitoba, Canada. 1929.
- Haley, Dr. George, 2241 Durant Ave., Berkeley, Calif. 1925.
- Hall, Dr. E. Raymond, Museum Vertebrate Zoology, Univ. Calif., Berkeley, Calif. 1924.
- Halladay, Daniel S., 628 E. Chestnut Ave., Santa Ana, Calif. 1910.
- Halleck, Taylor H., Newport, Ore. 1923.
- Halloran, Arthur F., 2716 Belrose Ave., Berkeley, Calif. 1933.
- Hand, Ralph L., 428 11th St., St. Maries, Idaho. 1927.
- Handley, Charles O., 2719 Fendall St., Richmond, Virginia. 1927.
- Hann, H. H., 3171 N.E. 35th Place, Portland, Oregon. 1909.
- Hanna, Wilson C., 141 East F St., Colton, Calif. 1902 (1921). [L.]
- Hannum, Robert G., 3634 Hughes Ave., Palms, Calif. 1934.
- Hargrave, Lyndon L., Museum of Northern Arizona, Flagstaff, Ariz. 1931.
- Harper, Dr. Francis, 732 Yale Ave., Swarthmore, Penn. 1920.
- Harris, Mrs. Charles A., R. No. 1, Box 100, Carmel, Calif. 1930.
- Harris, Harry, 5234 Hermosa Ave., Eagle Rock, Los Angeles, Calif. 1914 (1919). [L.]
- Harrison, Ed. N., Box 324, Encinitas, Calif. 1931.
- Harrison, John W., Box 324, Encinitas, Calif. 1932.
- Hart, Cecil, 132 N. Third St., Montebello, Calif. 1920.
- Hart, Hugh E., Medina, N. Y. 1927.
- Harter, Samuel G., Natural History Museum, Balboa Park, San Diego, Calif. 1927.
- Hartung, Miss Esther Margaret, 124 Mill St., Grass Valley, Calif. 1923.
- Harvey, Miss Annie G., P. O. Box 735, Fresno, Calif. 1929.
- Harwell, Charles Albert, Park Naturalist, Yosemite, Calif. 1925.
- Hatfield, Donald M., 2504 Etna St., Berkeley, Calif. 1934.
- Hathaway, Harry S., Riverside and Thorne Aves., South Auburn, R. I. 1912.
- Hatton, Mrs. Louise M., Corral de Tierra Route, Monterey, Calif. 1931.
- Havemeyer, Henry O., Mahwah, N. J. 1917.
- Haven, Herbert M. W., 500 Forest Avenue, Portland, Maine. 1926.
- Hawkins, Leslie Gilman, 157 Frisbie St., Oakland, Calif. 1930.
- Heermans, Miss Martha, Hayden, Ariz. 1929.
- Heineman, O. J., 14 Bay View, Mill Valley, Calif. 1908.
- Heller, Edmund, Zoological Park, Milwaukee, Wis. 1894.
- Helme, Arthur H., Brooklyn Museum, Eastern Parkway, Brooklyn, N. Y. 1911.
- Helmuth, William Tod, 3rd, 667 Madison Ave., New York, N. Y. 1933.
- Hendee, Esther Crissey, Dept. Zoology, Univ. Calif., Berkeley, Calif. 1933.
- Henderson, A. D., Belvedere, Alberta, Canada. 1923.
- Henderson, Prof. Junius, 530 Webster St., Palo Alto, Calif. 1909.
- Henderson, Walter C., 8 Magnolia Parkway, Chevy Chase, Md. 1918.
- Henne, Christopher, 3rd, 312 Grand Ave., South Pasadena, Calif. 1929.
- Henry, G. M., Colombo Museum, Colombo, Ceylon. 1932.
- Henry, Wilbur V., Route 1, Box 381, Los Altos, Calif. 1934.

- Hersey, F. Seymour, Easton, Mass. 1915 (1920). [L.]
- Hesse, Curtis, Mus. Paleontology, Univ. Calif., Berkeley, Calif. 1930.
- Hildebrand, Miss Dorothy B., Box 71, Kelseyville, Calif. 1931.
- Hill, Henry G., 465 S. 15th St., San Jose, Calif. 1933.
- Hill, Mrs. Howard G., 329 Summit Ave., Redlands, Calif. 1924.
- Hillebrand, Antoinette B., (Mrs. W. A.), 1400 Hawthorne Terrace, Berkeley, Calif. 1934.
- Hilton, Dr. W. A., Pomona College, Claremont, Calif. 1921.
- Hinshaw, Thomas Doane, 1908 Scottwood Ave., Ann Arbor, Mich. 1931.
- Hinze, Miss Lucile, 813 S. Adams St., Glendale, Calif. 1929.
- Hoag, Benj., Garfield, N. Y. 1927.
- Hodgkins, Albert E., 347 E. Flora St., Stockton, Calif. 1929.
- Hoerl, Miss Ruth Amy, 1128 S. Stanislaus St., Stockton, Calif. 1931.
- Hohl, Miss Leonora A., 1219 Washtenaw Ave., Ann Arbor, Mich. 1934.
- Holgersen, Miss Violet D., 596 N. Chester St., Pasadena, Calif. 1929.
- Holland, Harold M., Box 515, Galesburg, Ill. 1901 (1920). [L.]
- Holman, F. C., Box 8, Yosemite, Calif. 1914 (1928). [L.]
- Holmers, S. W., 5296 E. 2nd St., Long Beach, Calif. 1932.
- Holt, Miss Vesta, State Teachers College, Chico, Calif. 1931.
- Hooper, Emmet T., Museum Vertebrate Zoology, Berkeley, Calif. 1934.
- Hoover, Prof. Theodore J., Room 531, Engr. Bldg., Stanford University, Calif. 1898 (1916). [L.]
- Hopkins, Cranson L., 920 McKinley Ave., Oakland, Calif. 1930.
- Horn, E. E., 332 Giannini Hall, Univ. Calif., Berkeley, Calif. 1931.
- Horsfall, R. Bruce, 3835 S. St. N.W., Washington, D. C. 1914.
- Howard, Dr. Hildegard, 973 N. Normandie Ave., Los Angeles, Calif. 1924.
- Howatt, Dr. G. A., 324 F St., Eureka, Calif. 1925.
- Howell, Alfred Brazier, Dept. of Anatomy, Johns Hopkins Medical School, Baltimore, Md. 1908 (1915). [L.]
- Howell, Arthur H., 2919 S. Dakota Ave., Washington, D. C. 1916.
- Howitt, Miss Beatrice Fay, 1341 7th Ave., San Francisco, Calif. 1927.
- Howsley, Lucien B., 606 W. Vernon Ave., Los Angeles, Calif. 1931.
- Howsley, Lucien R., 8710 Dalton Ave., Los Angeles, Calif. 1927.
- Huber, Wharton, Academy Natural Sciences, 19th and The Parkway, Philadelphia, Penn. 1915.
- Huey, Laurence M., Natural History Museum, Balboa Park, San Diego, Calif. 1909 (1921). [L.]
- Hughes, George T., Box 153, Plainfield, N. J. 1927.
- Hungate, Prof. J. W., State Normal School, Cheney, Wash. 1924.
- Hunter, George, R. F. D. No. 1, Box 215, Salinas, Calif. 1930.
- Hunter, J. S., Box 482, San Mateo, Calif. 1903.
- Hurley, John B., 401 S. 17th St., Yakima, Wash. 1921.
- I
- Ingersoll, Albert M., 908 F St., San Diego, Calif. 1895 (1932). [Honorary].
- Isham, C. Bradley, 909 Valley Road, Upper Montclair, N. J. 1909.
- J
- Jackson, Dr. Hartley H. T., Biological Survey, Washington, D. C. 1921.
- Jacobsen, W. C., 1341 43rd St., Sacramento, Calif. 1916.
- Jacot, Edward C., Route 2, Box 224, Tucson, Arizona. 1923.
- Jaeger, Edmund C., 4462 W. 6th St., Riverside, Calif. 1922.
- Jay, Antonin, 1622 Pennsylvania Ave., Los Angeles, Calif. 1901.
- Jay, William, 113 Mayland St., Philadelphia, Penn. 1925.
- Jenkins, Elizabeth Shirley, 3759 Grim St., San Diego, Calif. 1929.
- Jenkins, Hubert O., 2116 3rd Ave., Sacramento, Calif. 1933.
- Jens, Randolph, 1010 N. Cherry Ave., Tucson, Ariz. 1931.
- Jerrard, Robert Bruce, Garfield, Colorado. 1927.
- Jewett, Stanley G., 401 New U. S. Court House, Portland, Ore. 1909.
- Johnson, Archibald, Stewart, Nevada. 1934.
- Johnson, Dr. Myrtle E., 205 E. 8th St., National City, Calif. 1908.
- Jones, Dr. Lynds, 352 W. College St., Oberlin, Ohio. 1911.
- Jones, S. Paul, 509 West Ave. North, Waukesha, Wis. 1929.
- Jordan, A. H. B., Everett, Wash. 1911.
- Judson, W. B., Room 2, H. W. Hellman Bldg., Los Angeles, Calif. 1894.

K

- Kaeding, George L., 704 Palm Drive, Glendale, Calif. 1903.
Kalmbach, Edwin R., Control Methods Research Laboratory, 527 Custom House, Denver, Colo. 1923.
Kautz, Miss E. Beryl, 2845 Van Ness Ave., San Francisco, Calif. 1927.
Keeler, Mrs. Laurretta B., 901 Laguna Ave., Burlingame, Calif. 1925.
Kellogg, Miss Louise, The Regillus, 19th and Jackson Sts., Oakland, Calif. 1911 (1927). [L.]
Kellogg, Miss Mildred, 2232 Piedmont Ave., Berkeley, Calif. 1921.
Kellogg, Ralph T., Silver City, N. M. 1916.
Kellogg, Dr. Vernon L., National Research Council, B and 21st Sts., Washington, D. C. 1901.
Kelly, Junea W. (Mrs. G. Earle), 1311 Grand St., Alameda, Calif. 1918.
Kelso, Leon, Div. Food Habits Research, U. S. Biological Survey, Washington, D. C. 1929.
Kendeigh, Dr. S. Charles, Biology Dept., Western Reserve Univ., Cleveland, Ohio. 1932.
Kennard, F. H., Dudley Road, Newton Centre, Mass. 1911 (1916). [L.]
Kenyon, Karl Walton, 6001 Bellevue Ave., La Jolla, Calif. 1934.
Keyes, Prof. Charles R., 323 Tenth Ave. South, Mt. Vernon, Iowa. 1900.
Kibbe, Mrs. A. S., Room 604, 450 McAllister St., San Francisco, Calif. 1917.
King, Benjamin H., 1215 Lakeshore Drive, Coeur d'Alene, Idaho. 1921.
Kinsey, Eric Campbell, Box 76, Manor, Calif. 1933.
Kirby, Prof. Harold, Jr., Dept. Zoology, Univ. Calif., Berkeley, Calif. 1930.
Kirn, Albert J. B., Box 157, Somerset, Texas. 1918.
Kloss, Phillips, 3420 Webster St., Oakland, Calif. 1929.
Klotz, Charles D., Box 142, Pearisburg, Virginia. 1930.
Knapp, Elmer, Route 2, Troy, Penn. 1924.
Knickerbocker, Chas. K., 410 Michigan Ave., Chicago, Ill. 1905.
Kofoid, Prof. Chas. A., Dept. Zool., Univ. Calif., Berkeley, Calif. 1909.
Kretzmann, Prof. Paul E., 801 De Mun Ave., St. Louis, Mo. 1914.
Kursinski, George J., 1016 Winchester Ave., Alhambra, Calif. 1931.
Kuser, John Dryden, Bernardsville, N. J. 1912.

L

- Labarthe, Jules, 21 Plaza Drive, Berkeley, Calif. 1914.
Laing, Hamilton M., Comox, B. C., Canada. 1926.
La Jeunesse, H. V., 2933 Lincoln Ave., Alameda, Calif. 1916.
Lamb, Chester C., 235 W. 27th St., Los Angeles, Calif. 1899.
Lancashire, Sarah H. (Mrs. J. Henry), Graftonwood, Manchester, Mass. 1911.
Landberg, Robert L., Colorado Museum Nat. Hist., City Park, Denver, Colo. 1926.
Lane, Geo. W., Morgan Hill, Calif. 1914.
Langevin, Elmer, 325 South Broadway, Crookston, Minn. 1922.
Langstroth, James H., P. O. Box D, Silver City, New Mexico. 1922.
Laskey, Amelia R. (Mrs. Fred C.), Graybar Lane, Nashville, Tenn. 1933.
Lastreto, C. B., 260 California St., San Francisco, Calif. 1913.
Law, Mrs. Laura B., Altadena, Calif., 1915 (1920). [L.]
Lawrence, Alexander G., 104 Sherburn St., Winnipeg, Canada. 1927.
Leavens, Mrs. Robert French, 1900 Yosemite Road, Berkeley, Calif. 1928.
Leffingwell, Mrs. Anne Maclay, Lolo, Montana. 1931.
Lelande, Harry J., 518 Douglas Bldg., Los Angeles, Calif. 1901.
Leopold, Aldo, New Soils Bldg., Univ. Wisconsin, Madison, Wis. 1916.
Letl, Frank H., Field Museum Nat. Hist., Chicago, Ill. 1927.
Leitch, Mrs. James L., 2022 Parker St., Berkeley, Calif. 1929.
Lewis, Edward H., Box 192, Avalon, Calif. 1929.
Lewis, Richard N., 6481 Benvenue Ave., Oakland, Calif. 1930.
Libby, Miss Gretchen L., 61 Las Flores Drive, Altadena, Calif. 1911.
Light, Prof. S. F., Dept. Zool., Univ. Calif., Berkeley, Calif. 1929.
Ligon, J. Stokley, Box 667, Carlsbad, New Mexico. 1914.
Lillie, Harry C., 411 S. Mariposa Ave., Los Angeles, Calif. 1930.
Lincoln, Frederick C., Biological Survey, Washington, D. C. 1922.
Lindsey, Mrs. Helena, R. D. No. 4, Box 30, Hayward, Calif. 1931.
Linsdale, Dr. Jean M., Museum Vertebrate Zoology, Univ. Calif., Berkeley, Calif. 1926.

- Little, Luther, 1400 Wayne Ave., South Pasadena, Calif. 1913 (1920). [L.]
 Littlejohn, Chase, 323 E. Brewster Ave., Redwood City, Calif. 1901.
 Lloyd, Hoyes, 582 Mariposa Ave., Rockcliffe Park, Ottawa, Canada. 1923.
 Locke, Samuel B., Isaak Walton League, 222 North Bank Drive, Chicago, Ill. 1931.
 Lodge, Fred S., 423 South Stone Ave., La Grange, Ill. 1930.
 Lofberg, Mrs. Lila McKinley, Edison Camp 62, Big Creek, Calif. 1925.
 Loring, J. Alden, U. S. Army, Owego, Tioga Co., N. Y. 1914.
 Lyon, William I., 124 Washington St., Waukegan, Ill. 1928.

Mc

- MacAleer, Miss Mary G., 68 Post St., San Francisco, Calif. 1928.
 McAtee, W. L., Biological Survey, Washington, D. C. 1907.
 McBride, Everett F., 5513 Keniston Ave., Los Angeles, Calif. 1923.
 McCabe, Elinor Bolles (Mrs. T. T.), Museum Vertebrate Zoology, Berkeley, Calif. 1929.
 McCabe, Thomas T., Museum Vertebrate Zoology, Berkeley, Calif. 1926.
 McCoy, Frank J., Santa Maria Inn, Santa Maria, Calif. 1923.
 McCoy, Herbert N., 1226 Westchester Place, Los Angeles, Calif. 1928.
 McCracken, Dr. Isabel, Box 1545, Stanford University, Calif. 1933.
 McCreary, Otto, Agricultural Hall, Univ. Wyo., Laramie, Wyoming. 1928.
 McDonald, Mrs. James R., 2677 Larkin St., San Francisco, Calif. 1927 (1927). [L.]
 McFadden, Miss Effie B., 496 Crestlake Drive, San Francisco, Calif. 1934.
 McGee, Miss Jean Clare, Box 102, Ross, Calif. 1934.
 McGregor, Richard C., Bureau of Science, Manila, P. I. 1893 (1916). [L.]
 McGuire, Ignatius, 209 Guyot Hall, Princeton Univ., Princeton, N. J. 1929.
 McHenry, D. E., Grand Canyon, Arizona. 1933.
 McKee, Edwin D., Grand Canyon National Park, Grand Canyon, Ariz. 1933.
 McLain, Robert B., Box 132, Hollywood, Calif. 1897.
 McLaughlin, Donald, Lassen Union High School, Susanville, Calif. 1930.
 McLean, Donald D., 101 E. James St., San Jose, Calif. 1916.
 McManus, William Reid, Memramcook, New Brunswick, Canada. 1931.
- M
- Mackie, Rev. Augustine C., Vernon, B. C., Canada. 1929.
 Macneil, Sayre, 1004 Edison Bldg., 601 W. 5th St., Los Angeles, Calif. 1934.
 Maescher, Mrs. Ada Belle, 4652 Mascot St., Los Angeles, Calif. 1928.
 Mailliard, Ernest C., Federal Reserve Bank, San Francisco, Calif. 1909.
 Mailliard, John W., 2461 Gough St., San Francisco, Calif. 1894.
 Mailliard, Joseph, 1815 Vallejo St., San Francisco, Calif. 1895 (1920). [L.] (1924) [Honorary].
 Mains, Allen W., Orosi, Calif. 1932.
 Marburger, Clifford, Denver, Lancaster Co., Penn. 1925.
 Marsh, Vernon L., Box 597, Great Falls, Mont. 1933.
 Marshall, Dr. Arthur P., 778 Higuera St., San Luis Obispo, Calif. 1932.
 Martin, Early, Jr., 1909 Rio Grande St., Austin, Texas. 1929.
 Martin, Patrick W., Tempe, Langford Station, B. C., Canada. 1931.
 Maskey, Dr. A. J., Flagstaff, Arizona. 1933.
 Mason, Dr. Herbert L., 1190 Sterling Ave., Berkeley, Calif. 1927.
 Massey, Herbert, Ivy Lea, Burnage, Didsbury, Manchester, England. 1909.
 May, Dr. John B., South Main St., Cohasset, Mass. 1929.
 Mayr, Dr. Ernst, American Museum of Natural History, New York, N. Y. 1933.
 Mead, Mrs. Edwin B., 2618 Etna St., Berkeley, Calif. 1920.
 Meadows, Donald C., Box 845, Avalon, Calif. 1919.
 Meehan, Mrs. Eunice M., Big Creek, Calif. 1928.
 Meredith, George S., Farmers and Merchants Savings Bank, Oakland, Calif. 1927.
 Merriam, Dr. C. Hart, 1919 16th St., N. W., Washington, D. C. (1909) [Honorary].
 Mershon, W. B., Saginaw, Mich. 1911 (1919). [L.]
 Michael, Chas. W., Yosemite, Calif. 1916.
 Michener, Harold, 418 N. Hudson Ave., Pasadena, Calif. 1924.
 Middleton, R. J., Whitehall Road, Norristown, Penn. 1919.
 Mikesell, Mrs. H. B., 18 Ardmore Road, Berkeley, Calif. 1925.
 Miller, Dr. Alden Holmes, Museum Vertebrate Zoology, Univ. Calif., Berkeley, Calif. 1923.

- Miller, Prof. Loye Holmes, Univ. Calif. at Los Angeles, Los Angeles, Calif. 1905.
 Miller, Miss Mary Mann, 5928 Hayes Ave., Highland Park, Los Angeles, Calif. 1920.
 Miller, Dr. Robert C., Dept. Zool., Univ. Washington, Seattle, Wash. 1921.
 Mills, Miss Laura Ethel, Fallon, Nevada. 1930.
 Minturn, Ward B., 2840 Mariposa St., Fresno, Calif. 1933.
 Mitchell, Dr. Walton I., 1644 Visalia St., Berkeley, Calif. 1909.
 Moffitt, James, 1879 Broadway, San Francisco, Calif. 1917.
 Monk, Harry C., 3108 Long Blvd., Nashville, Tenn. 1925.
 Moore, Miss Nellie, 122 Falcon Ave., Long Beach, Calif. 1915.
 Moore, Robert D., 744 Walnut Ave., Redlands, Calif. 1928.
 Moore, Robert T., R. D. No. 1, Box 28A, Pasadena, Calif. 1911.
 Moran, R. B., 1335 Olive Lane, La Cañada, Calif. 1897.
 More, R. L., 1905 Wilbarger St., Vernon, Texas. 1911.
 Morley, Prof. S. Griswold, 2635 Etna St., Berkeley, Calif. 1916.
 Morse, George W., 318 E. 9th St., Tulsa, Okla. 1922.
 Mulford, Miss Alice Stewart, 1637 Spruce St., Berkeley, Calif. 1933.
 Mullen, James L., 1264 Logan Ave., Salt Lake City, Utah. 1915.
 Munro, J. A., Okanagan Landing, B. C., Canada. 1914.
 Murie, Olaus J., Jackson, Wyoming. 1913.
 Mushbach, George E., Brigham City, Utah. 1932.
 Myers, Mrs. Harriet W., 311 N. Ave. 66, Los Angeles, Calif. 1912.
 Myers, Miss Mabel Adelaide, 617 W. Center St., Anaheim, Calif. 1922.
- N
- Nace, Charles A., 80 Vine St., San Jose, Calif. 1920 (1920). [L.]
 Nash, Herman W., Box 264, Pueblo, Colo. 1922.
 Naumberg, Mrs. Walter W., American Museum Natural History, New York, N. Y. 1922.
 Neff, Johnson A., U. S. Biological Survey, P. O. Box 1317, Sacramento, Calif. 1920.
 Nelson, Arnold L., U. S. Biological Survey, Washington, D. C. 1932.
 Nelson, Dr. Edward W., Biological Survey, Washington, D. C. 1904 (1917) [Honorary].
 Nelson, Mrs. Jean M., 1729 Spruce St., Berkeley, Calif. 1929.
 Nelson, Roy A., Livermore, Calif. 1925.
 Neterer, Miss Inez May, 2702 N. Broadway, Seattle, Wash. 1926.
 Newcomb, Cyrenius A., Jr., The Junipers, Bloomfield Hills, Route 3, Pontiac, Mich. 1928.
 Nice, Mrs. Margaret M., 156 W. Patterson St., Columbus, Ohio. 1921.
 Nichols, John T., American Museum Nat. Hist., New York, N. Y. 1909.
 Nicholson, Donald J., Box 631, Orlando, Fla. 1911.
 Noack, Harry R., 309 Perry St., Oakland, Calif. 1901.
 Nokes, Dr. I. D., 1120 Rives-Strong Bldg., Los Angeles, Calif. 1914.
 Norton, Arthur H., 22 Elm St., Portland, Maine. 1918.
- O
- Oberholser, Dr. Harry C., 2805 18th St., N. W., Washington, D. C. 1904.
 O'Farrell, Mrs. Mabel E., 2403 F St., San Diego, Calif. 1917.
 Olsen, Carl, 11 E. Gabilan St., Salinas, Calif. 1932.
 O'Melveny, Stuart, 1233 Garfield Ave., South Pasadena, Calif. 1931.
 O'Neill, Mrs. R. B., 102 E. 13th St., Tucson, Arizona. 1931.
 O'Roke, Dr. Earl C., School of Forestry, Univ. Mich., Ann Arbor, Michigan, 1929.
 Orr, Robert T., 759 31st Ave., San Francisco, Calif. 1931.
 Ortez, Mervyn Annis, 2127 Oregon St., Berkeley, Calif. 1932.
 Osborne, Mrs. Lewis, 888 Armada Terrace, Point Loma, Calif. 1934.
 Osgood, Dr. Wilfred H., Field Museum Nat. Hist., Chicago, Ill. 1893 (1927). [L.]
 Owen, Virgil W., 1752 Hudson, Hollywood Sta., Los Angeles, Calif. 1896.
- P
- Pack, Arthur Newton, 11 Morven St., Princeton, N. J. 1925.
 Palmer, Miss Elizabeth Day, 1741 Harvard Blvd., Los Angeles, Calif. 1909.
 Palmer, Dr. R. H., Hotel Andino, Havana, Cuba. 1915.

- Palmer, Dr. Theodore S., 1939 Biltmore St., N. W., Washington, D. C. 1903 (1920). [L.] (1929) [Honorary].
- Pangburn, Clifford H., 225 Laurel Ave., Highland Park, Ill. 1920.
- Parker, Edgar J., 27 E. Marshall St., West Chester, Penn. 1932.
- Parker, Herbert, South Lancaster, Mass. 1911.
- Parmenter, Henry E., 1808 Vallejo St., San Francisco, Calif. 1916.
- Parsons, Mrs. Edward L., 2504 Pacific Ave., San Francisco, Calif. 1929.
- Parsons, Dr. James J., M.D., 345 N. Alta Vista, Monrovia, Calif. 1934.
- Partin, J. L., 2151 Balsam Ave., Los Angeles, Calif. 1930.
- Patrick, Dr. Leon, Smith-Grote Bldg., Orange, Calif. 1931.
- Patterson, Mrs. Theresa Homet, Wyalnsing, Penn. 1926 (1926). [L.]
- Paul, Prof. J. H., 4263 South 13th East, Salt Lake City, Utah. 1915.
- Paul, Lucius H., 424 Carter St., Rochester, N. Y. 1911.
- Payne, Ernest A., 206 E. California Blvd., Ontario, Calif. 1934.
- Peabody, Rev. P. B., 2011 Park Ave., Topeka, Kans. 1904.
- Peake, Lionel A. McK., P. O. Box 368, Nanaimo, B. C., Canada. 1930.
- Pearse, Theed, Courtenay, B. C., Canada. 1927.
- Pearson, Dr. T. Gilbert, 1775 Broadway, New York, N. Y. 1910.
- Pease, Charles A., 308 Vassar St., Berkeley, Calif. 1930.
- Peck, Prof. Morton E., 1552 Court St., Salem, Oregon. 1909.
- Pemberton, J. R., 3031 North Lake Ave., Altadena, Calif. 1900 (1928). [L.]
- Penrose, Russell C., Grass Valley, Calif. 1930.
- Pennock, Chas. J., Kennett Square, Penn. 1909.
- Perkins, Samuel E., 3rd, 709 Inland Bank Bldg., Indianapolis, Ind. 1926.
- Perley, Mrs. Lyman O., 5330 Pershing Ave., St. Louis, Mo. 1927 (1927). [L.]
- Perry, Mrs. Elinor B., 254 Main St., Hayward, Calif. 1924.
- Perry, Mrs. F. J., 1556 Webster St., Palo Alto, Calif. 1934.
- Peters, James L., Museum of Comparative Zoology, Cambridge, Mass. 1933.
- Peterson, Hans C., Box 396, Reedley, Calif. 1924.
- Pettingill, Olin Sewall, Middleton, Mass. 1934.
- Pettit, Chas. deForest, 225 Bush St., San Francisco, Calif. 1928.
- Peyton, Laurence, R. D. 2, Fillmore, Calif. 1909 (1922). [L.]
- Peyton, Sidney B., R. D. 2, Fillmore, Calif. 1913 (1922). [L.]
- Phelps, Frank M., 312 Fifth St., Elyria, Ohio. 1912.
- Philipp, P. B., 220 Broadway, New York, N. Y. 1911 (1920). [L.]
- Phillips, Allan R., P. O. Box 357, Scarsdale, N. Y. 1933.
- Phillips, Dr. John C., Knobfields, Wrenham, Mass. 1911.
- Pickard, Miss Edith A., Women's Faculty Club, Univ. Calif., Berkeley, Calif. 1926.
- Pickwell, Dr. Gayle B., State Teachers College, San Jose, Calif. 1928.
- Pierce, Wright M., Box 343, Claremont, Calif. 1902 (1920). [L.]
- Pike, Eugene R., 6 N. Michigan Ave., Chicago, Ill. 1927.
- Post, Miss Pearl E., 634 Glendale Ave., Prescott, Arizona. 1930.
- Potter, Miss Jessica A., 1118 Santee St., Los Angeles, Calif. 1922.
- Potter, Laurence B., Gower Ranch, East-end, Sask., Canada. 1925.
- Pough, Richard H., Alden Park Manor, Germantown, Penn. 1926.
- Poultney, Robert, Arcata, Humboldt Co., Calif. 1933.
- Powell, Miss Helen, Hotel Durant, Berkeley, Calif. 1914 (1928). [L.]
- Prahl, Carl A., Box 57, Encinitas, Calif. 1931.
- Pratt, Miss Helen S., 2451 Ridge View, Eagle Rock, Calif. 1920.
- Preble, Edward A., 3027 Newark St., Washington, D. C. 1926.
- Presnall, Clifford C., Zion National Park, Springdale, Utah. 1930.
- Price, Mrs. Elizabeth H., 2243 College Ave., Berkeley, Calif. 1932.
- Price, Dr. Guthrie R., 409 Hillcrest Blvd., Monrovia, Calif. 1934.
- Price, John B., 532 Alvarado Rd., Stanford University, Calif. 1926.
- Prill, Dr. A. G., Scio, Ore. 1921.
- Pringle, Miss Cornelia C., 1816 Vallejo St., San Francisco, Calif. 1915 (1921). [L.]
- Pursell, Wm. McLain, 511 Neilson St., Berkeley, Calif. 1926.

Q

- Quattlebaum, W. Dan, 1925 Paloma St., Pasadena, Calif. 1927.
- Quillin, Roy W., 422 West Kings Highway, San Antonio, Texas. 1921.

R

- Racey, Kenneth, 3262 West First Ave., Vancouver, B. C., Canada. 1934.
- Randall, Mrs. W. S., No. 2, Enfield Road, Austin, Texas. 1929.
- Randolph, Miss Flora A., 2962 Derby St., Berkeley, Calif. 1907.
- Ransom, Webster H., 708 W. 20th Ave., Spokane, Wash. 1921.
- Rathbun, S. F., 1127 Olympic Way, Seattle, Wash. 1904.
- Ray, Milton S., 2901 Broadway, San Francisco, Calif. 1899.
- Record, Miss Gladys E., 44 Fairview Ave., Los Gatos, Calif. 1926.
- Redington, Alfred P., 900 State St., Santa Barbara, Calif. 1932.
- Reid, Miss Lea, Box 565, Redwood City, Calif. 1934.
- Reif, Mrs. Vivian, 2033 Hearst Ave., Berkeley, Calif. 1928.
- Reis, C. Oscar, 646 Juanita Ave., Los Angeles, Calif. 1917.
- Relyea, Miss Gladys M., 660 Salvatierra St., Palo Alto, Calif. 1934.
- Renoll, Kenneth L., Box 225, Hanover, Penn. 1933.
- Reynolds, Dr. T. Eric, Franklin Bldg., Oakland, Calif. 1934.
- Rich, Dr. Guy C., 1820 El Cerrito Place, Hollywood, Calif. 1911.
- Rich, Prof. Willis H., 442 Jordan Hall, Stanford University, Calif. 1934.
- Richards, Dr. T. W., U. S. Naval Hospital, Washington, D. C. 1908.
- Richardson, Carl, Prospect, Oregon. 1925.
- Richardson, W. D., 4215 Prairie Ave., Chicago, Ill. 1918.
- Richardson, William, care Walter L. Richardson, R. D. 2, Box 1170, Porterville, Calif. 1925.
- Richmond, Watts L., 24 Beard Ave., Buffalo, N. Y. 1930.
- Ridgway, John L., 635 N. Pacific Ave., Glendale, Calif. 1926.
- Rigden, Mrs. Allace M., 424 Harriet Ave., Palo Alto, Calif. 1934.
- Riley, J. H., U. S. National Museum, Washington, D. C. 1909.
- Rinehart, Miss Amy, 540 E. 7th St., Oakland, Calif. 1927.
- Rishel, John B., Barnum School, W. 5th Ave. and Hooker St., Denver, Colo. 1925.
- Ritter, Prof. Wm. E., Museum Vertebrate Zoology, Univ. Calif., Berkeley, Calif. 1901.
- Roberts, Mrs. D. Lorraine, 1109 Spruce St., Berkeley, Calif. 1931.
- Roberts, Dr. Thomas S., Museum Nat. History, Univ. Minnesota, Minneapolis, Minn. 1909.
- Robertson, Howard, 157 Wilton Drive, Los Angeles, Calif. 1896 (1926). [L.]
- Robertson, John McB., Buena Park, Calif. 1913.
- Robertson, Mrs. John McB., Buena Park, Calif. 1920.
- Roe, Mrs. E. D., Pelton Water Wheel Co., 19th and Harrison Sts., San Francisco, Calif. 1919.
- Ross, Roland C., 1820 Bushnell Ave., South Pasadena, Calif. 1920.
- Rowan, Prof. William, Dept. Zool., Univ. Alberta, Edmonton, Alta., Canada. 1921.
- Rowley, John Stuart, 1821 S. Monterey St., Alhambra, Calif. 1928.
- Rush, Miss Lora G., 1607 Walnut St., Berkeley, Calif. 1920.
- Russell, Ward C., Museum Vertebrate Zoology, Berkeley, Calif. 1930.
- Rust, Henry J., Box 683, Coeur d'Alene, Idaho. 1911.
- Ryan, William K., 1661 Crescent Place, N. W., Washington, D. C. 1932.

S

- Salt, W. Ray, Rosebud, Alberta, Canada. 1931.
- Sampson, Walter B., 1005 N. San Joaquin St., Stockton, Calif. 1894.
- Sampson, W. F., 174 St. James Drive, Piedmont, Calif. 1926 (1928). [L.]
- Sanford, Dr. Leonard C., 347 Temple St., New Haven, Conn. 1915.
- Sanford, Louis A., 8275 W. 4th St., Los Angeles, Calif. 1931.
- Saunders, Aretas A., 48 Longview Ave., Fairfield, Conn. 1909.
- Saunders, Mrs. Kenneth, High Acres, Berkeley, Calif. 1934.
- Saunders, W. E., London, Ont., Canada. 1910.
- Schaefer, Oscar F., 724 Woodbine Ave., Rochester, N. Y. 1917.
- Scheffer, Theodore H., P. O. Box 307, Puyallup, Wash. 1933.
- Schenck, Sara M. (Mrs. W. Egbert), Twenty-nine Palms, Calif. 1924.
- Schneider, Fred A., care Warren Dried Fruit Co., San Jose, Calif. 1901.
- Schneider, Mrs. G. H., 4618 Kingswell Ave., Los Angeles, Calif. 1921.
- Schneider, J. J., 103 St. Joseph Ave., Long Beach, Calif. 1899.
- Schorger, A. W., 168 N. Prospect Ave., Madison, Wis. 1928.
- Schulthess, Miss Pauline, Kelseyville, Calif. 1930.

- Schwarting, Wm., 681 Spruce St., Oakland, Calif. 1930.
- Schwerin, Mrs. Lotta Bean, Hotel Solano, Vallejo, Calif. 1933.
- Sefton, J. W., Jr., 638 F St., San Diego, Calif. 1923.
- Sharp, Clarence S., Box 32, Escondido, Calif. 1902.
- Shaw, Dr. W. T., 1002 Cambridge Ave., Fresno, Calif. 1911.
- Shearer, Dr. A. R., Mont Belvieu, Chambers Co., Texas. 1928.
- Sheffer, W. J., 4731 Angeles Vista Blvd., Los Angeles, Calif. 1930.
- Shelton, A. C., Suite 1, 224 Mass. Ave., Arlington, Mass. 1934.
- Shepherd, Mrs. Hattie E., 15 E. Home Place, Redlands, Calif. 1921.
- Sherman, Miss Althea R., Route 2, National, via McGregor, Iowa. 1911 (1916). [L.]
- Sherwood, Jack, Box 264, Salinas, Calif. 1923.
- Shiras, George, 3rd, 4530 Klingle, Washington, D. C. 1914.
- Shoemaker, Clifton B., P. O. Box 14, Glendora, Calif. 1930.
- Shuey, Mrs. Ethel W., 12763 Kling St., North Hollywood, Calif. 1929.
- Silliman, Edmund N., 36 Oak St., Salinas, Calif. 1918.
- Silliman, O. P., 225 West Alisal St., Salinas, Calif. 1893.
- Silverstone, Dr. Dave, 2863 Leeward Ave., Los Angeles, Calif. 1929.
- Simpson, Gene M., 744 N. 11 St., Corvallis, Ore. 1930.
- Sims, Mrs. R. M., 36 Hillcrest Road, Berkeley, Calif. 1933.
- Skillen, Donald R., Route 1, Box 65, Pasadena, Calif. 1927.
- Skinner, E. H., Montrose, Calif. 1927.
- Skinner, M. P., 1316 Harding Ave., Long Beach, Calif. 1915 (1920). [L.]
- Sloanaker, Jos. L., 1117 Maxwell Ave., Spokane, Washington. 1910.
- Slocum, John Jermain, Elliott House, G42, Cambridge, Mass. 1932.
- Smith, Allyn G., 722 Santa Barbara Road, Berkeley, Calif. 1909.
- Smith, Anna Margaret (Mrs. Otis H.), 89 Elm Ave., San Anselmo, Calif. 1934.
- Smith, Austin P., Apartado 412, San Jose, Costa Rica. 1907.
- Smith, Charles Piper, 976 Riverside Ave., San Jose, Calif. 1923.
- Smith, Clarence F., Gen. Del., Riverbank, Calif. 1928.
- Smith, C. R., 563 42nd Ave., San Francisco, Calif. 1917.
- Smith, Mrs. Elizabeth Burnell, 1029 N. Stanley Ave., Los Angeles, Calif. 1921.
- Smith, Miss Emily, Route 1, Box 93, Los Gatos, Calif. 1924.
- Smith, Horace G., 2918 Lafayette St., Denver, Colo. 1914.
- Smith, Miss Josephine E., 51 Canyon Road, Berkeley, Calif. 1928.
- Smith, Loris Philbrick, 2017 108th Ave., Oakland, Calif. 1930.
- Smith, Napier, 153 Westminster Ave., N., Montreal West, Quebec, Canada. 1919.
- Snell, Charles H., Box 101, Red Deer, Alberta, Canada. 1926.
- Snyder, Prof. J. O., 542 Alvarado Ave., Stanford University, Calif. 1900.
- Snyder, L. L., Royal Ontario Museum of Zoology, Toronto, Ont., Canada. 1924.
- Sours, Miss Lulu, 1027 Bryant St., Palo Alto, Calif. 1934.
- Spaulding, Prof. M. Herrick, State Agricultural College, Bozeman, Mont. 1918.
- Spear, James, Jr., 41 Eden Ave. Oaklyn, N. J. 1927.
- Stansell, S. S., 324 Naylor Ave., Taft, Calif. 1925.
- Stedman, Miss Clara M., 3871 Howe St., Oakland, Calif. 1929.
- Steele, Ed. S., P. O. Box 261, Las Cruces, New Mexico. 1926.
- Steinbeck, Wm. P., 611 Bristol Ave., Stockton, Calif. 1897.
- Stephens, Mrs. Albert Blasdel, 1695 Filbert St., San Francisco, Calif. 1934.
- Stephens, Mrs. Estelle, 4000 E. 2nd St., Long Beach, Calif. 1934.
- Stephens, Frank, Natural History Museum, Balboa Park, San Diego, Calif. 1894 (1912). [Honorary].
- Stephens, Prof. T. C., Morningside College, Sioux City, Iowa. 1914.
- Stevens, Laurence, 918 E. Haley St., Santa Barbara, Calif. 1930.
- Stevenson, James, 410½ S. Catalina St., Los Angeles, Calif. 1928.
- Stewart, Paul A., Leetonia, Ohio. 1920.
- Stoddard, H. L., Sherwood Plantation, Thomasville, Ga. 1914.
- Stone, Harry Herbert, Jr., P. O. Box 101, Sturbridge, Mass. 1925.
- Stone, Dr. Witmer, Academy Nat. Sciences, Logan Square, Philadelphia, Penn. 1924.
- Stoner, Emerson A., Box 444, Benicia, Calif. 1918.
- Storer, Prof. Tracy I., University Farm, Davis, Calif. 1910.
- Streator, Clark P., 16 Mason St., Santa Cruz, Calif. 1919.
- Strong, Wm. A., 247 Grand Ave., San Jose, Calif. 1912 (1920). [L.]

- Suffel, Shumway, 1015 S. Oak Knoll Ave., Pasadena, Calif. 1926.
 Sugden, J. W., 47 S. 8th W. St., Salt Lake City, Utah. 1915.
 Sumner, E. L., Jr., Museum Vertebrate Zoology, Univ. Calif., Berkeley, Calif. 1924.
 Sumner, E. L., 1652 Euclid Ave., Berkeley, Calif. 1930.
 Sumner, Miss Florence Ann, P. O. Box 739, Elk Grove, Calif. 1933.
 Sumner, Miss Margaret, 1652 Euclid Ave., Berkeley, Calif. 1931.
 Sutton, Dr. George M., Pebble Hearths, Bethany, West Virginia. 1924.
 Swanson, Gustav, 3305 47th Ave. S., Minneapolis, Minn. 1928.
 Swarth, Harry S., 2800 Prince St., Berkeley, Calif. 1897 (1923). [L.]
 Swasey, Miss Alice J., 2626 Benvenue Ave., Berkeley, Calif. 1930.
 Swenk, Prof. Myron H., 1410 N. 37th St., Lincoln, Nebraska. 1916.

T

- Tait, Eric, Summerland, B. C., Canada. 1928.
 Tanner, Prof. V. M., Brigham Young Univ., Provo, Utah. 1919.
 Tate, James, Route 1, Ontario, Calif. 1934.
 Taverner, P. A., National Museum, Ottawa, Ont., Canada. 1909.
 Taylor, Miss Grace M., 2420 S. Atherton St., Berkeley, Calif. 1932.
 Taylor, Mrs. H. J., 900 Santa Barbara Road, Berkeley, Calif. 1920.
 Taylor, Jesse H., 2385 Hill Drive, Los Angeles, Calif. 1919.
 Taylor, Dr. Lewis Walter, Poultry Division, Univ. Calif., Berkeley, Calif. 1931.
 Taylor, Robert, 4033 Coolidge Ave., Oakland, Calif. 1930.
 Taylor Dr. Walter P., 1746 E. 5th St., Tucson, Arizona. 1905.
 Teachenor, Dix, 1020 W. 61st St., Kansas City, Missouri. 1922.
 Terrill, L. McL., 24 Prince St., St. Lambert, Quebec, Canada. 1911.
 Test, Dr. Louis A., 511 Russell St., West Lafayette, Ind. 1930.
 Thompson, Ben H., 328 Hilgard Hall, Univ. Calif., Berkeley, Calif. 1931.
 Thompson, Mrs. Christian, 1004½ Cragmont Ave., Berkeley, Calif. 1934.
 Thomson, Miss Isabel A., 5939 Shafter Ave., Oakland, Calif. 1918.
 Thorne, Mrs. Wm. V. S., 810 5th Ave., New York, N. Y. 1927 (1928). [L.]
 Thorpe, William H., Imperial Institute of Entomology, Farnham Royal, Bucks, England. 1928.
 Todd, W. E. Clyde, Carnegie Museum, Pittsburgh, Penn. 1909.
 Tolman, Cyrus F., Jr., 506 Mayfield Ave., Stanford University, Calif. 1933.
 Tonkin, George, Biological Survey, 211 P. O. Bldg., Berkeley, Calif. 1920.
 Torrey, Frederic C., 1 Canyon Road, Berkeley, Calif. 1922.
 Treganza, A. O., P. O. Box 104, Lemon Grove, San Diego Co., Calif. 1907.
 Trescott, E. B., R. D. 4, Box 357, Petaluma, Calif. 1915.
 Trost, Henry, 475 29th St., San Francisco, Calif. 1924.
 Troxell, Mrs. Inez Dorsey, 636 Coventry Road, Berkeley, Calif. 1933.
 Trumbull, J. H., 39 Farmington Ave., Plainville, Conn. 1911.
 Tucker, Mrs. Carl, Mt. Kisco, New York, 1927 (1931). [L.]
 Tucker, Nion R., 111 Sutter St., San Francisco, Calif. 1929.
 Turnbull, James Douglas, 2065 48th Ave. W., Vancouver, B. C., Canada. 1923.
 Twining, Mrs. Frances S., 740 Morgan Bldg., Portland, Oregon. 1927.
 Twining, Howard, 6160 Acacia Ave., Oakland, Calif. 1934.
 Tyler, John G., P. O. Box 173, Fresno, Calif. 1905 (1920). [L.]
 Tyler, Dr. Winsor M., 112 Pinckney St., Boston, Mass. 1914.

U

- Uhler, Francis Morey, Biological Survey, Washington, D. C. 1928.
 Unglish, W. E., Gilroy, Calif. 1910.
 Urner, Charles Anderson, 596 Westminster Ave., Elizabeth, N. J. 1925.

V

- Van Rossem, Adriaan J., Calif. Institute Technology, Pasadena, Calif. 1909.
 Van Straaten H., Bankertloan 13, Velp, (G), Holland. 1918 (1919). [L.]
 Van Tyne, Dr. Josselyn, Museum of Zoology, Ann Arbor, Mich. 1931.
 Vargas, Glen, Route 3, Hayward, Calif. 1933.
 Verges, Eugene M., 1126 Beacon St., Brookline, Mass. 1931.
 Vignos, Miss Blanche, 915 S. Carondelet St., Los Angeles, Calif. 1926.
 Von Bloeker, John C., Jr., 4029 Oakwood St., Los Angeles, Calif. 1927.
 Vorhies, Prof. Chas T., Univ. Arizona, Tucson, Ariz. 1916.

W

- Wagener, Mrs. Willis W., 141 Woodland Ave., Palo Alto, Calif. 1934.
- Walden, Miss Clita L., 761 E. 12th St., Eugene, Oregon. 1931.
- Wales, Joseph H., Natural History Mus., Stanford University, Calif. 1934.
- Walker, Alex, Route A, Box 267, Tillamook, Oregon. 1911.
- Walker, Ernest P., Apt. 103, 3016 Tilden St., Washington, D. C. 1910.
- Walker, George R., 12 P. O. Place, Salt Lake City, Utah. 1926.
- Walker, Lewis Wayne, 4169 Third Ave., San Diego, Calif. 1934.
- Walkinshaw, Lawrence Harvey, D. D. S., 1421½ W. Michigan Ave., Battle Creek, Mich. 1934.
- Wanzer, James Olin, 5939 Sherwood Dr., Oakland, Calif. 1922.
- Warmer, Charles A., 412 W. 6th St., Los Angeles, Calif. 1920.
- Warren, Edward R., 1511 Wood Ave., Colorado Springs, Colo. 1909.
- Warrington, Henry, Jackson, Calif. 1927.
- Watson, Frank, 7103 Waterman Ave., St. Louis, Mo. 1934.
- Watson, Dr. S. A., Whittier College, Whittier, Calif. 1929.
- Weber, J. A., 151 Grand Ave., Leonia, N. J. 1915.
- Webster, Frederick S., 555 N. Harvard Blvd., Los Angeles, Calif. 1925.
- Wegeforth, Dr. Harry M., Zool. Soc. of San Diego, Balboa Park, San Diego, Calif. 1920.
- Weiser, Chas. S., 105 W. Springettsbury Ave., York, Penn. 1920.
- Wendle, Joseph, Bowron Lake, Barkerville, B. C., Canada. 1926.
- Werner, Miss Selma, 2085 Sacramento St., San Francisco, Calif. 1925.
- Wetherbee, Mrs. Kenneth, 11 Dallas St., Worcester, Mass. 1931.
- Wetmore, Dr. Alexander, U. S. National Museum, Washington, D. C. 1909 (1927). [L.]
- Weydemeyer, Winton, Fortine, Montana. 1926.
- Weyl, Edward S., 6506 Lincoln Drive, Mt. Airy, Philadelphia, Penn. 1929.
- Whilton, Emery M., Hotel Tulare, Tulare, Calif. 1934.
- White, Ed. F. G., 185 Wurtenburg St., Ottawa, Canada.
- White, Francis B., Concord, N. H. 1926.
- Whitney, Clarence W., 433 California St., San Francisco, Calif. 1927.
- Whittle, Charles L., Peterboro, New Hampshire. 1922.
- Widmann, Berthold, 4621 Wesley Ave., Los Angeles, Calif. 1923.
- Wilder, H. E., Carlotta, Humboldt County, Calif. 1909.
- Wilder, Melvin D., P. O. Box 642, Santa Cruz, Calif. 1928.
- Willard, B. G., 51 Fresh Pond Parkway, Cambridge, Mass. 1910.
- Willet, George, Los Angeles Museum, Exposition Park, Los Angeles, Calif. 1905.
- Williams, Laidlaw O., P. O. Box 453, Carmel, Calif. 1925.
- Williams, Miss Olive, R. D. No. 2, Puente, Calif. 1932.
- Williams, Robert W., U. S. Biological Survey, Washington, D. C. 1914.
- Wilson, W. Warner, Box 128, Davis, Calif. 1929.
- Winson, J. W., Box 642, Sumas, Wash. 1925.
- Wolfe, Capt. L. R., 1819 Pershing Road, Chicago, Ill. 1921.
- Wood, Dr. Casey A., Library, McGill Univ., Montreal, Canada. 1916. (1928). [L.]
- Wood, George C., Danville, Calif. 1928.
- Wood, Norman A., Museum Zool., Univ. Michigan, Ann Arbor, Mich. 1916.
- Woodbury, Dr. Angus M., 248 University St., Salt Lake City, Utah. 1930.
- Woods, Dr. Ralph A., 2468 W. Pico St., Los Angeles, Calif. 1931.
- Woods, Robert S., Box 356, Azusa, Calif. 1920 (1927). [L.]
- Worcester, Hugh M., U. S. Reservation Protector, Box 50, Merrill, Ore. 1934.
- Wright, Miss Anna L., 460 Oberlin St., Palo Alto, Calif. 1934.
- Wright, Curtis, Maplewood Ranch, Calistoga, Calif. 1916 (1922). [L.]
- Wright, Frank S., 14 Cayuga St., Auburn, N. Y. 1910.
- Wright, George M., Room 213, Hilgard Hall, Univ. Calif., Berkeley, Calif. 1927.
- Wythe, Miss Margaret W., Museum Vertebrate Zoology, Univ. Calif., Berkeley, Calif. 1912.

Y-Z

- Yoder, Wm. H., Jr., 859 Granite St., Philadelphia, Penn. 1926.
- Yost, Mrs. Myrtle K., 2352 Los Colinas Ave., Los Angeles, Calif. 1923.
- Youngworth, William, 3119 E. 2nd St., Sioux City, Iowa. 1930.
- Zahn, Otto J., 2115 Estrella Ave., Los Angeles, Calif. 1896.
- Zech, Miss Lillian, 535 W. Highland Ave., Redlands, Calif. 1916.
- Zerlang, Lawrence, 524 W. Hawthorne St., Eureka, Calif. 1918.

